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It has always been our custom in the columns of the "Engineering and Mining Journal" to expose all schemes which we believe to be dishonest. Fake mining stocks and fraudulent companies have met with no mercy at our hands, as our readers know; and we have given in the past and are still giving a great deal of time and labor to ascertain the facts with regard to such unworthy enterprises. To the honest and legitimate mining undertakings—happily far greater in number than the other sort—we also devote much time, labor and expense, seeking to give our readers the latest and most reliable news than can be secured about their progress and condition from time to time. It is, in fact, difficult for any one not familiar with the work to appreciate the time and care required to collect, sift out and edit properly the news from the numerous mining districts of all parts of the United States.

While it is our constant endeavor thus to keep our readers posted as to the progress and standing of mining enterprises, and to warn them of the dishonest ones, we must positively decline to give advice about individual investments. Our readers must remember that this cannot be done without making examinations and investigations which would require the services of a small army of mining engineers and metallurgists. It would, moreover, interfere with the legitimate work of the many capable consulting engineers and experts who offer their services to the public through the medium of our advertising columns.

We are impelled to make this statement by the recent receipt of numerous letters asking our advice as to the purchase of mining stocks or investments in certain mining properties. There is at the present time a greater disposition to put money into mines, and more money ready for such enterprises than has been the case for ten years past. We want to do all that is possible to favor such investments and to direct them in proper channels; but we cannot do this in individual cases, for the reasons we have given. Those correspondents who have asked specific advice will therefore understand the reasons, if their letters remain unanswered.

In our last issue our correspondent in the Joplin District in Missouri gives a warning which is apparently needed. That there have been many transfers of property in that region recently, our readers know; and up to this time most of them have been legitimate sales of good property. The prosperity of the district, however, and the boom which it has been receiving through the rise in prices of zinc and its ores have brought in the promoter, with the intention of buying—whether good properties or worthless matters little, as long as he has a chance to work them off at a profit. Promoters are buying now on a fictitious scale of values, and in some cases have taken land which is known to be bare of minerals, but which can be made to serve as the basis of a new company with the people who know little or nothing about the facts. We regret this very much, as it may serve to discredit a region in which a legitimate mining industry has grown up and prospered with very little outside help. It was inevitable, however, that such a result should follow the great prosperity of the district. From this time on new Joplin enterprises should be watched carefully by investors and caution should be exercised when their stocks are offered for sale.

American visitors to London are well acquainted with the summer "Exhibitions" at Earl's Court. These exhibitions are got up in the usual Kiralfy style. There are many halls and galleries of alleged exhibits which no one ever looks at, and there are acres of gardens with switchbacks, great wheels, band-stands, promenades, restaurants and extensive side-shows of the Buffalo Bill, Savage South Africa and Cafe Chantant types. Though each year the exhibition is graced by a different name, such as "Indian," "Colonial," "French" or "Greater Britain," the exhibits and entertainments continue much the same and their chief use is to afford people a pleasant lounge for the evenings. This year, however, there are some exhibits relating to the mining and metallurgy of British colonies, and though most of them are of a formal and uninteresting nature, yet there is much to teach the ordinary observer. There is an excellent installation of a stamp mill and accessories, at work, and this gives a good idea to the layman of the process of gold milling. We advise the London directors of gold mining companies to go and study this installation. It will afford them an unrivalled opportunity of acquiring at least an elementary knowledge of a subject which they are supposed to understand. As a rule they know as much about milling plants as the London milkman knows about cows.

A feature of the London mining stock market recently has been the revival of interest in American mines, which have been neglected almost entirely for several years past, while attention has been absorbed by South Africa and Western Australia. Gold mines as well as copper mines have shared in the revival; and there is a general readiness to invest in mines in this country, which has not existed for years past. The most notable of the new American flotations in London has been that of the Independence mine at Cripple Creek, which is now the property of an English corporation—Stratton's Independence, Limited—and is

capitalized at £1,100,000. Of this $5,500,000 stock, however, only $500,000 has been offered to the public so far, the balance going to the vendors; but some of this purchase stock will doubtless be on the market before long.

The Independence Mines has always had a high reputation at Cripple Creek. No reports have been made from it, as it was not the property of an incorporated company; but it has been generally believed that the owner, Mr. Stratton, was making a large profit from the mine. Probably the only question is as to the amount of capital, which may be higher than the mine ought to carry; but that is only to be decided by future results. This is the first large investment of British capital in Cripple Creek; its success will be very likely to induce others.

The May reports of the blast furnaces show that we are now producing pig iron at the rate of about 13,500,000 tons a year, which will probably be increased to 15,000,000 tons before the end of the month, or early next month, when the great furnaces at Lorain and some of the new Pittsburg furnaces will go in to blast. Some doubt has been expressed in certain quarters about the sufficiency of the iron ore supply; but Lake navigation is now open, and with the increased activity prevailing in the Lake Superior District, and the greater extension of operations at many other mines, there will probably be no difficulty in supplying the furnaces with the material that they need.

Shipments of iron ore from the Lake Erie docks to furnaces have been unusually active during the winter. At the close of navigation on December 1st, 1898, the stocks of iron ore reported on the Lake Erie docks amounted to 5,136,407 tons. On May 1st, 1899 ,the stocks were 2,073,254 tons, the lowest point for several years and about 1,100,000 tons below May 1st, 1898. This shows that the winter shipments to furnaces amounted to 3,063,153 tons, the largest on record. Although stocks are small, the first arrivals of the season will be due in a few days, and the ore piles will be rapidly replenished. The figures given above, with those of shipments and port receipts, show that for the year ending May 1st, the deliveries of Lake Superior ore to furnaces through Lake Erie ports reached a total of 12,122,982 tons. Adding to these the deliveries at South Chicago, Milwaukee and other points, we have a total consumption of about 14,100,000 tons, or sufficient to make over two-thirds of the iron which the furnaces have turned out.

THE BOSTON CONSOLIDATED COPPER MINE.

Our contemporary, the London "Financial Times," has been criticising pretty severely the Boston Consolidated Copper Mines in Utah, the stock of which has been floated in London, and is at present at a considerable premium. This criticism has been accompanied by some remarks on other Utah companies, which we do not think are justified by the facts; but in the case of the Boston Consolidated judging by the company's own showing, there appears to be no doubt as to the worthlessness of the proposition. The company has been floated, apparently, very largely on the reputation of the Utah Consolidated Gold Mines, Limited, a company which has so far made a very liberal showing, and advantage was also taken of the boom in everything connected with copper. The company has not been at all liberal with reports, and only very general statements have been presented. A recent publication in London, however, presents some figures which certainly call for attention.

In this report the managing director, Mr. Samuel Newhouse, claims that development shows the existence on the company's property of some 290,000,000 tons of ore "carrying 1 to 2 per cent. copper, with some small values in gold and silver." This is based on a report from Mr. Thomas Weir, the mine manager, in which the following statement is made: "Assuming only 2,000 feet along the vein, that is 1,000 feet on each side of the Copper Center Tunnel, we have a body 2,000 feet long, 3,500 feet wide (or across the formation) and 500 feet deep, or 3,500,000,000 cubic feet. Allowing 12 cubic feet, in place, to the ton (this is exceedingly liberal), we have 291,666,666 tons. The above ore body assays from 0.75 per cent. to 2.5 per cent. copper."

Mr. Weir's assumptions are certainly on an exceedingly liberal scale, and it may well be questioned whether a good deal more development work is not needed to prove the existence of so great a mass of ore. But even if we accept the statement, and admit that the company has a very large body of low-grade ore, it does not seem to better the case. According to Mr. Weir's report the ore runs from 0.75 to 2.5 per cent. copper, which would give an average of 1.38 per cent. But even if the greater part—or even the whole—should reach 2 per cent., it would not better the situation. It would be impossible to mine and treat ores carrying 2 per cent. or less of copper at a profit, under the existing conditions in Utah. In the Montana mines, where ores from 4 per cent. up are treated, it is well known that the profits come chiefly from the gold and silver in the ores; and it is not claimed that the Boston Consolidated mineral has more than very small values in gold and silver; and many other parallel cases might be presented. Allowing for the greatest cheapness of mining which can be made possible by the large size of the ore-body, one cannot figure out anything but a heavy loss on 1½ and 2 per cent. copper ore. Moreover, it is not probable that the price of copper is going to stay permanently at 17 or 18 cents; and with every fall the loss on operations would be greater.

On the company's own showing, therefore, the more ore it has of the kind it claims the poorer it is. Undoubtedly our London friends, who are now buying the stock at high prices, will realize this a little later.

IRON AND STEEL PRODUCTION OF THE WORLD.

The year 1898 was a period of active business almost throughout the civilized world, and the demand for materials of construction rose to an unprecedented level. As a consequence the blast furnaces and steel mills were active everywhere, and their total production reached a point higher than was ever before recorded. The following table, compiled from the figures collected for "The Mineral Industry," Volume VII., shows the output in 1898, as compared with 1897; the figures from all the important countries being furnished from official sources. In all cases the figures have been reduced to metric tons, according to our usual custom:

Iron and Steel Production, in Metric Tons.

Countries.	Pig Iron.		Steel.	
	1897.	1898.	1897.	1898.
United States	9,807,123	11,962,317	7,289,300	9,045,315
United Kingdom	8,930,086	8,769,249	4,559,736	4,639,042
Germany	6,889,087	7,402,717	5,091,294	5,734,307
Total	25,626,296	28,134,383	16,940,330	19,418,664
Austria-Hungary	1,205,000	1,250,000	553,000	605,500
Belgium	1,024,666	982,748	616,604	653,130
Canada	41,500	46,889	.....	.....
France	2,472,143	2,534,427	1,281,595	1,441,633
Italy	12,500	12,850	57,250	58,750
Russia	1,857,000	2,228,850	831,000	1,095,000
Spain	282,171	261,799	121,800	112,995
Sweden	533,800	570,550	268,300	289,750
All other	450,000	545,000	310,000	355,000
Grand total	33,505,076	36,507,487	20,979,179	24,030,032

The first impression derived from this table is of the magnitude of the figures and the extent and rapidity of the increase. The production of pig iron last year reached a total of 36,507,487 metric tons, and showed an increase of no less than 3,002,411 tons, or 9.0 per cent.; while that of steel in its various forms was 24,030,032 tons, a gain of 3,050,853 tons, or 14.5 per cent. The consumption, moreover, increased to an even greater extent than the production, since the reports from all the leading producing countries show that the stocks of material on hand at the close of the year were low; and in almost all they were considerably smaller than at the opening of the year. That the supply has not exceeded the increasing demand is further shown by the general firmness of prices; and since the close of the year the quotations have advanced to a notable degree.

The United States was far in advance of all its competitors, both in the quantity produced and the percentage of increase. This country made last year very nearly one-third of the pig iron and three-eighths of the steel produced in the world; and is showing itself able to maintain or even increase the proportion. Of its two chief rivals, Great Britain was last year nearly stationary, while the increases shown by Germany, though notable in quantity, were much less than our own. The three countries named now furnish a very large part of the world's supplies. In 1898 the United States turned out 33.7 per cent. of all the pig iron, Great Britain 24 per cent. and Germany 20.3 per cent.; the three together making 77.1 per cent. of all the pig iron. In steel the proportion was even greater, the United States furnishing 37.6 per cent., Germany 23.9 per cent. and Great Britain 19.3 per cent.; the total for the three being 80.8 per cent. of all the steel made. The three countries are far ahead of all others, France, which comes next in importance, showing an output of only about one-third as much pig iron as Germany and one-fourth as much steel.

It is to be noted that Germany, although it produces less pig iron than Great Britain, reports a larger make of steel. This is due to the fact that Germany converts a much larger proportion of its pig iron into steel, while Great Britain adheres to use of wrought or puddled iron to a greater extent than any other prominent nation. Even there, however, the employment of the puddling furnace for refining iron is on the decline; and in 1898 there was a decrease in the make of wrought iron, coupled with a large increase in that of steel.

The growth in the use of steel is, in fact, one of the most notable facts of recent years. The many improvements in processes have enabled makers not only to turn out steel in large quantities and at a low cost, but to furnish a reliable material of uniform quality. For rails its superiority was long ago admitted; and for structural material of all kinds, for boiler and ship plates, and for numerous other uses it is now the accepted standard. Moreover, steel castings are now used in loco-

motive and steam engine construction and other work in many places where cast iron was formerly employed; and in hardware and small work steel is taking the place of malleable iron. For tin-plates, also, steel is now universally used in the United States and very largely in Great Britain. One great factor in the change is the possibility of using machinery to a much greater extent in steel making than in puddling, thereby reducing cost and facilitating the handling of great quantities of material. It is, in fact, the Bessemer converter and the open-hearth furnace which have made it possible to utilize the present great output of iron.

The changes referred to are shown by a comparison of the production of last year with that of 1894. In the five years the growth in the pig iron production of the world has been 40 per cent.; but the increase in steel has been 88 per cent. In 1894 the tonnage of steel made was about half of that of pig iron; but in 1898 it was more than two-thirds. Each year a larger proportion of the pig iron has been made for conversion into steel.

The production of iron in 1898 required the mining and handling of approximately 70,000,000 tons of iron ore. This is a large draft upon the deposits, and it is not surprising that in many parts of Europe iron-masters are looking out for new sources of supply. In most sases they are to be had only by going some distance from the existing plants. There is no danger of an exhaustion of supplies, however, since the deposits of iron ore already known are abundant; but in some cases they will have to be made available by supplying transportation at considerable cost. An iron ore scarcity is not probable, except locally and occasionally. In our own case we still have abundant supplies which can be used in case of need, though the deposits at present worked promise to be sufficient for some time to come.

The great demand for iron and steel which characterized the year 1898 has continued well into 1899, and is taxing the ability of our iron and steel makers to meet it. The prospects are that it will continue well through the year. Large as was the production of 1898, it will again be exceeded. It is quite probable that the current year may see a total make of 40,000,000 tons of pig iron and 28,000,000 tons of steel; with the furnaces ready to make a still greater record in 1900.

NEW PUBLICATIONS.

"Michigan; Sixteenth Annual Report of the Bureau of Labor and Industrial Statistics." Joseph L. Coxe, Commissioner of Labor; John Holbrook, Deputy Commissioner. Lansing, Michigan; State Printer. Pages 562.

This report contains much useful information upon the labor interests of Michigan, and the conditions prevailing in the different branches of industry. It does not concern itself with the iron and copper mining interests, which are covered by the report of the State mining commissioner, separately issued. It contains, however, a chapter on soft coal mining, which is comparatively a new interest in Michigan, and has attained some importance in the southeastern section of the State. An interesting chapter gives a condensed description on each county in the State, showing its population, the nature of the soil, and the principal productions of each one. An appendix gives the reports of the State factory inspectors.

"Summary Report of the Geological Survey Department of Canada for the Year 1898." George M. Dawson, Director. Ottawa: Government Printer. Pamphlet; pages 208.

In order to facilitate the early appearance of the several reports which are combined in an annual volume, these are issued separately, when ready, and are finally bound together for permanent record. The "summary" forms one of these separate reports, and following the former custom of the Canadian Geological Survey, the Director now issues that for 1898 in advance of the complete volume. It is an abstract of the explorations and surveys, completed or in progress, with a record of investigations conducted in the office, publications, collections, personnel, etc.

During the year covered by this report there were 16 field parties out, distributed in British Columbia, the Yukon District (two parties), Alberta (two), Ontario, Quebec, New Brunswick (two), Nova Scotia (three), and Ungava (east coast of Hudson Bay). Special attention was naturally given to the Yukon District, and an interesting account is presented of the investigation of that region by Messrs. Tyrrell and McConnell.

"First Aid to Injured Miners." By E. Hamilton Fish. Pamphlet, 23 pages; illustrated. Price, 50c.

This essay is in substance a lecture delivered before mine foremen and others, which originally was published in the "Colorado Medical Journal" for July, 1898, having been preceded by an article on the same topic, also by Dr. Fish, in that magazine for February, 1898. The author, a military surgeon, but now a mine surgeon at Ouray, Colo., calls attention to the similarity between miners and soldiers in active service, so far as ever present dangers are concerned, and observes that the system of "first aid" in military service might be advantageously applied to the mining industry. It is impossible to give in a brief notice an adequate summary of the points contained in Dr. Fish's monograph, for the text is already in very concise shape. One matter, however, which should be mentioned is the author's account of the "first aid chest" and its equipment. Altogether, the whole subject of emergency treatment of injuries from mine accidents is very practically and clearly discussed, and the pamphlet will be exceedingly useful to mine officials and mining men generally, especially so in remote camps, at isolated mines and at large mines elsewhere to which no regular surgeon is attached.

"Wright's Australia, India, China and Japan Trade Directory and Gazetteer." Fifth Edition, Enlarged and Improved. New York: George Wright. Pages, 3,728. Price $10.

This is the fifth edition of a work the usefulness and value of which has already been well established. The bulky and handsome volume contains a classified list of trades and professions not only in the countries named, but in Canada, South and Central America, the West Indies and South Africa. The present issue has been thoroughly revised and brought up to date with the assistance of postmasters, railway companies, consuls, bank managers, merchants and others, resident in the chief towns of the territory which it covers. Representative manufacturers, merchants, tradesmen and professional men, in every city and town of any importance are duly classified under their appropriate heads. Importers and exporters and all other mercantile and professional men must find this volume of the greatest value in placing them in direct communication with all classes of business firms throughout the countries covered. Nor does the worth of the book end here. As a gazetteer of every country, city, town and village in its chosen area it gives all necessary statistics as to population, resources and other features necessary to an understanding of their commercial possibilities.

"From Euston to Klondike." By Julius M. Price. London: Sampson Low, Marston & Co. Cloth, pages 301; with map and numerous photo-engravings. Price in New York, $2.50.

The author, who visited British Columbia and the Yukon region in 1898, as correspondent to the London "Illustrated News," contributed to that periodical a series of strikingly illustrated articles, which form the basis of the present volume. Mr. Price has succeeded in making a very readable little book, and as he does not assume to impart technical or even much commercial information, it would be hypercritical to notice lapses in descriptions of mining and related matters. Still, as Mr. Price rather patronizingly exclaims, "Oh, those delightful Americanisms," when adverting to the word "lunch" (which, by the by, the Britishers are substituting for "luncheon"), it is only kindness to suggest that next time it would be worth while to refer to a glossary of mining terms and also to avoid locating "bungalows," "log-built cottages," "wagonettes," etc., in the far Northwest. However, as a narrative of travel, "From Euston to the Klondike" perhaps gains from the fresh interest which the author, who is evidently a keen observer, imparts to his sprightly descriptions of matters which are commonplace and an old story to those who have been in new mining regions. It certainly will convey to the general reader vivid impressions of rough and more or less exciting experiences, which are wanting in prosaic reports, and it is free from the imaginative embellishments which have obscured so many of the ordinary newspaper accounts. It may also be a good substitute for ice in the dog days.

"British Columbia; Annual Report of the Minister of Mines for the year ending December 31st, 1898." J. Fred Hume, Minister of Mines; Wm. Fleet Robertson, Provincial Mineralogist. Victoria, B. C.; Provincial Printer. Pages, 274; illustrated. Price, 50 cents.

The reports issued from time to time by the mining department of British Columbia have been always creditable, containing a great deal of information of value to those interested in the mineral development of the province, and have also been brought out promptly, thus adding very much to their usefulness. The present provincial mineralogist has held the office for only a part of a year, but he has evidently determined to keep his reports up to the standard set by Mr. W. A. Carlyle, the previous capable incumbent of the office. The short time which Mr. Robertson had obliged him to limit somewhat the portion of the report which is based upon his personal observation, the facts for several of the districts being those furnished by their respective gold commissioners and mining recorders. In some respects the year covered was a very good one for the Province; there was an increase in gold production both from placers and lode mines, and a large gain in copper. Silver and lead, however, showed a decrease, which was chiefly to be attributed to the low prices of those metals in the latter part of 1897, and the early months of 1896. The statistics of production will be given elsewhere in an abstract made from this report.

The commissioner reports very little that is new. A discovery of platinum was made in the black sands obtained in some placer washings in the Omenica and Similkameen divisions, about 100 oz. having been obtained. Attention is again called to the advantages to be obtained from improvement of roads and other means of communication; which would make possible the working of many mines which are not now exploited, owing to the high cost of transporting supplies and of shipping the products. The report is illustrated by a number of engravings prepared from photographs of mines, mills, etc., and is accompanied by three maps.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"White Lead Processes and Products." By J. O. Handy. London: Eyre & Spottiswoode. Pamphlet; pages 12.

"Geological Literature Added to the Geological Society's Library During the Year 1898." London, England; published by the Geological Society. Pages, 186.

"The Short Line War." By Merwin-Webster. New York; the Macmillan Combpany, and London; Macmillan & Company, Limited. Pages, 334; illustrated. Price, $1.50.

"The Characters of Crystals; an Introduction to Physical Crystallography." By Alfred J. Moses. New York; the D. Van Nostrand Company. Pages, 212; illustrated. Price, $2.

"Annual Statistical Report of the American Iron and Steel Association, for the Year 1898." James M. Swank, General Manager of the Association. Philadelphia: Published by the Association. Pages 76.

"Ueber Magnetische Erzlagerstaetten und deren Untersuchung durch Magnetische Messungen." Von Th. Dahlborn. Freiberg, Germany: Craz & Gerlach. Pages, 68; with plates. Price (in New York), 85 cents.

"Quarterly Journal of the Geological Society." Volume LV., Part 2. Edited by L. L. Belinfante, Assistant Secretary. London, England; published for the Society by Longmans, Green & Co. Pages, 304; illustrated. Price (in New York), $1.75.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letter should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondend

The Spenazuma Mining Company.

Sir:—The true character of the Spenazuma enterprise, so much vaunted in the Eastern papers, and against which you have repeatedly warned your readers and the public, has been well exposed by George H. Smalley in a communication to the "Arizona Republican." He states that for weeks before the visit of guests and investors from the East, parties were kept busy transporting ore from copper mines in another district to the various barren openings on the Spenazuma in order to give them an appearance of value. In other words, the claims had been purposely salted so as to deceive the visitors. He concludes his communication as follows:

"Claims are made that the ore has been found and that shipping will soon begin. These statements are made to Eastern people and stock is sold upon them. A visit to the mine shows that they are untrue. The Spenazuma Company is committing a crime against Arizona which its people should punish. They are obtaining money under false pretenses and at the same time injuring the mining interests of the entire Territory. The company will no doubt fail, and hundreds of investors will hold Arizona responsible for their own folly."

It is gratifying to the people of Arizona to find that the papers of the Territory unite generally in full condemnation of fraudulent enterprises based, too often, upon the good reputation of Arizona's standard mines, the shares of which do not need advertising. Tucson.

Tucson, Arizona, May 20, 1899.

How the Beam Process Deceived the Uninitiated.

Sir:—I had presumed that the Beam process was permanently shelved, because of its ignominious failure in Colorado, until I read your editorial article in the "Engineering and Mining Journal" of May 6th. Allow me to briefly explain the Beam process and the Beam assay as illustrated in Colorado practice; following which I will give some metallurgical discoveries made some three years ago regarding the affinity of silver for gold in mercurial solution, which thoroughly exposes the Beam fraud.

There was always the necessary air of mystery surrounding the Beam process, together with the variation of manipulation in order to render it more attractive to the uninitiated. In general, however, the roasting as exemplified at the plant located at Placerville, Colo., was as follows: The pulverized ore was charged into a retort or muffle furnace, heated from the outside, mixed with 10 per cent. of sawdust (oak preferred) and a homeopathic dose of 0.05 per cent. of chloride of sodium. The front of the muffle was closed by doors and air under pressure was introduced within the muffle by suitable pipes. A discharge pipe led from the muffle and discharged the products of combustion beneath the surface of a solution contained in a tank. This tank was for the purpose of condensing any of the values volatilized from the ores. The ores were roasted at a low, scarcely visible red heat, and were kept thoroughly rabbled. Subsequently the roasted product was beneficiated in an ordinary pan amalgamating mill. For reasons shortly to be given, practical tests were discouragingly below laboratory tests.

The so-called Beam assay, or the method by which the efficiency of the process was always demonstrated, was conducted as follows: From 30 to 50 grams of the pulverized ore, through 60 mesh, was mixed with approximately the previously stated proportions of sawdust and salt, placed in a clay roasting dish and charged into the muffle of an assaying furnace. The muffle was kept at a low red heat and the ore stirred every 10 minutes until there was no further trace of sulphurous fumes or until the pyrites were converted into oxide of iron, as shown by grinding. The sawdust was usually entirely consumed prior to the commencement of oxidation of the pyrites. A portion of the roasted product was set aside for the ordinary fire assay; 30 grams of the same roasted product was placed in a Wedgewood mortar or a porcelain lined dish containing from 400 to 500 grams of mercury; water was added to make a pulp of proper consistency together with from 0.2 to 0.3 of a gram of pure silver foil; or in lieu of this, one-fourth of a silver dime. The pulp and quicksilver were slightly warmed and amalgamation assisted by continuously stirring with a wooden spatula for about an hour. The silver was added, so they stated, to increase the affinity of the mercury for the gold and in addition, the ores being usually low grade, the quantity of amalgam obtained without the addition of some silver would be so small that it could not be manipulated. The purity of the mercury used was demonstrated to you prior to amalgamation by squeezing some through a piece of buckskin and obtaining no amalgam.

The amalgamation completed, the pulp was washed from the mercury by a stream of water and the mercury again passed through the buckskin. The dry amalgam was wrapped in a piece of filter paper and retorted between two scorifiers, one inverted over the other. If there was no adherence to the scorifier the bullion was wrapped in a small piece of lead foil and cupeled, and the resulting button parted and the gold weighed. The results were very variable, depending upon all the conditions. Often, however, the gold obtained was from 5 to 20 per cent. higher than could be obtained from an equal quantity of ore by fire assay. Hence Mr. Beam, and often I think his assistants, sincerely believed that the gold was obtained from the ore.

About the time that these tests were being made in my office at Ouray, Colo., I was also commencing some laboratory amalgamation tests upon rich chloridized roasted silver-gold ores received from Mexico. One lot of these ores contained 11.86 kilograms silver and 14 grams of gold per metric ton. In the first three amalgamation tests upon this ore mercury from a gold stamp mill was used which had been twice squeezed through a wet buckskin. This mechanically purified mercury still contained 150 grams of gold and 111 grams of silver per metric ton of mercury. The result of these tests was that the silver saved from the bullion obtained in these amalgamations practically checked with what should have been obtained as shown by the tailings assays; but, much to my disgust, the gold obtained in the bullion was over 4 times as much as the ore contained, while tailing assays showed an actual extraction from only 52 to 66 per cent. of the gold. The richer the ore in free silver the greater was the extraction of the gold from its solution in the mercury. Repeating these tests just alluded to with distilled mercury, the silver and the gold obtained from the amalgam invariably fell short, for mechanical reasons, of what should have been obtained as shown by tailings assays.

A sufficient number of tests were personally made to demonstrate that when the mechanically purified mercury was used for amalgamation the Beam roasted ore gave no better results than ores otherwise roasted, and as a matter of fact no ores need be taken at all, as the addition of pure silver in varying proportions extracted equally variable proportions of the gold held in solution by the mercury. With chemically pure mercury used for the amalgamating tests no redeeming feature was found in the Beam roast; in fact, it was often prejudicial, as better results were obtained prior to roasting and finally the extraction was invariably below the results obtained by fire assay. In conclusion, I would suggest to the advocates of the so-called Beam process that they take the precaution to assay their tailings and they may find, as I often did, that notwithstanding an apparent high extraction as shown by the bullion produced, the tailings assays will show a very low actual extraction. G. E. Kedzie.

Durango, Mexico, May 17.

MINERAL PRODUCTION OF ALABAMA.

The mineral production of Alabama for the quarter ending March 31st is reported by Dr. Eugene A. Smith, State Geologist, as follows, coal and coke being stated in short tons; iron ore, pig iron and bauxite in long tons, and lime in barrels:

		January.	February.	March.	Three Mos.
Coal	Tons.	625,228	531,347	604,696	1,761,221
Coke	"	133,158	119,986	105,176	358,320
Iron ore	"	194,266	148,504	203,540	546,310
Pig iron	"	82,445	71,494	88,651	242,590
Stone for flux	"	39,131	31,694	40,804	111,629
Bauxite	"	929	738	1,261	2,918
Lime	Bbls.	.....	.....	.....	31,500

About 90 per cent. of the total production is furnished by the reports received by the producers, the remaining 10 per cent. being estimated, generally on the basis of last year's reports.

BITUMEN FROM LIGNITE.—According to a process patented by Herr Edgar von Boyen, of Hamburg-Steinwarder, the bitumen is recovered from lignite, quite damp as it is raised from the mine, by distillation in cylinders with superheated steam, or from dried lignite by treatment with an extracting substance such as benzine, the product being heated in a distilling retort at a temperature of 300° C. By passing through it superheated steam at a temperature of 250° C., and the consequent repeated distillation, the bitumen becomes transformed into a yellow waxlike crystalline substance called "Montan-Wachs" (mineral wax) which consists of two different and distinctly characterized substances, one acid and the other non-saturated carburetted hydrogen.

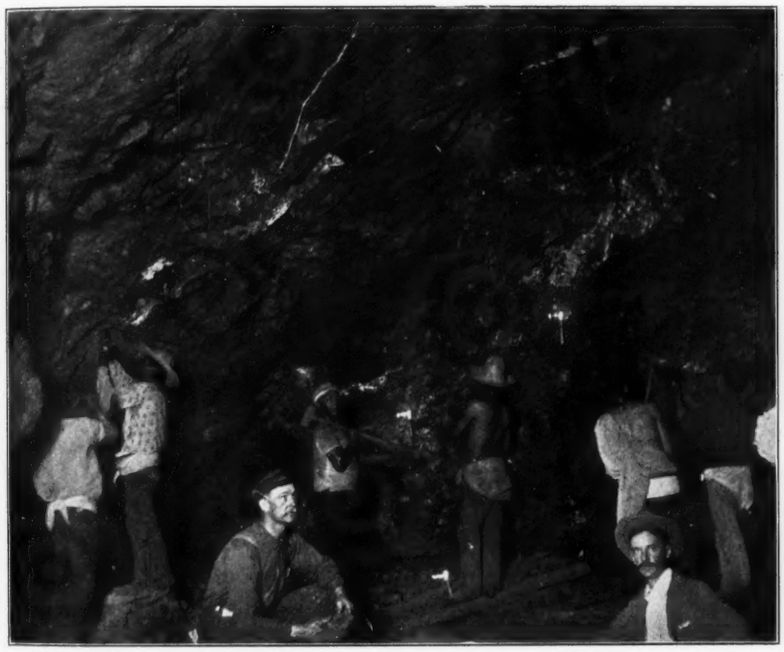
WATER-POWERS IN SWEDEN.—In a note alluding to the singular and almost complete absence of electric railways in Sweden, a country so admirably adapted for the generation of electricity by water power, the London "Electrician" states that in the northern province of Vesterbotten the Crown owns no less than 30 suitable falls, of which five are situated in Lapland. One river alone, the Uman, has no less than 13, the force of which is estimated at 140,000 H.P., some having from 15,000 to 25,000 H.P., while the fall varies from 40 ft. to 65 ft. In the south attempts are being made to utilize the famous Trollhattan waterfall for the lighting and working of industrial concerns in the city of Gothenberg, but it is said that some difficulties have arisen with regard to claims on the part of the Crown, which owns the shore rights.

FULLERS' EARTH IN FLORIDA.—A correspondent sends us the following: "A recent discovery of a large deposite of fullers' earth in Florida promises to be of considerable importance to the oil trade. Up to the present all the fullers' earth used by the cotton oil and lard manufacturers has been imported from England, and has sold for as much as $15 to $20 in New York. The domestic product has so far proved unsuitable for this particular purpose, and has sold for $7 per ton at the mines, being used only in the mineral oil industry. The product from this newly-discovered deposit has been thoroughly tested by experts in the cotton oil industry, and is pronounced to be fully equal to the best grades of the imported material. So soon as the property can be developed, consumers will be able to obtain a high grade fullers' earth of domestic origin which will cost them much less than they at present have to pay.

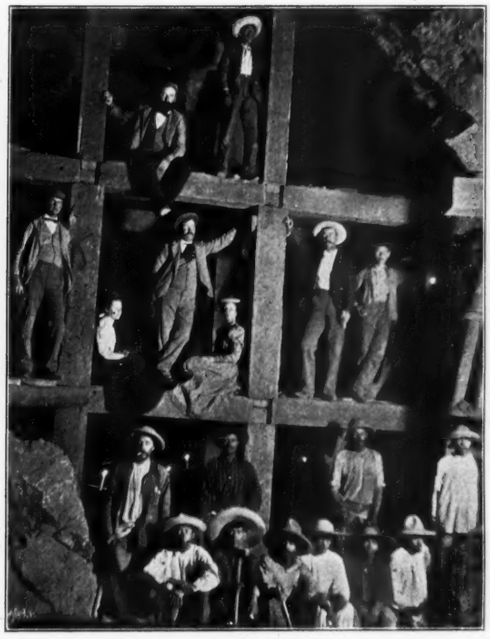
MEXICAN MINING SCENES.

The accompanying photographs, for which we are indebted to the courtesy of Mr. Alexander Ferguson of Sierra Mojada, Mexico, show some characteristic scenes in Mexican mines in that district. Three of them were taken in and near the Mina San Salvador. One, taken underground, shows the miners engaged in drilling on a breast of ore in one of the lower levels of the mine. The second, also taken underground, shows the method of timbering with square sets in the same mine; and it includes also a group of officers and miners. The third shows a peon packing square timbers, after the manner usual at the mine; it shows in a striking way the enormous loads which these Mexican laborers can and do carry.

The remaining photograph shows a cave which was opened up while drifting about March 15th, in the Fronteria Mine, in the same district. This cave is about 1,000 feet below the surface, and has since been thoroughly explored, showing it to be about 350 ft. long, 40 ft. wide and 40 ft. high. The walls of the cave are encrusted with lime crystals which cover almost the whole of the interior surface. These caves are not uncommon in the limestone formation of the district. The central figure in this photograph is a Mexican miner, wearing the usual underground dress of his class. He is decidedly a typical figure of the district.



DRILLING ON BREAST OF ORE, MINA SAN SALVADOR.



SQUARE SETS, MINA SAN SALVADOR.

MINING SCENES IN MEXICO.

Our correspondent adds that at this mine a Weber gasoline engine has been in use since July, 1897, with success.

THE COLORADO MINING LAW.

The Legislature of Colorado, at its last session, passed an amended mining law, which was approved April 10th, and will therefore go into effect July 9th. This act defines more clearly than before the authority and powers of the Bureau of Mines and of the State Commissioner of Mines and his deputies, the mine inspectors. The most important part of the new law is the code of regulations provided for mines in operation, which is a distinct advance upon the rules heretofore in force. The Mining Bureau is given authority to enforce these regulations, and specific penalties of fine and imprisonment are provided for mine-owners and managers who fail to comply with them, or who resist the proper inspection of their mines and premises. The regulations as enacted are given below, substantially in full:

1. Explosives must be stored in a magazine provided for that purpose alone; said magazine to be placed far enough from the working shaft, tunnel or incline to insure the same remaining intact in the event the entire stock of explosives in said magazine be exploded; that all explosives in excess of the amount required for a shift's work must be kept in said magazine; that no powder or other explosive be kept or stored in underground workings where men are employed; that each mine shall provide and employ a suitable device for thawing or warming powder and keep the same in condition for use; that oils, or other combustible substances shall not be kept or stored in the same magazine with explosives.

2. The commissioner of mines shall have authority to regulate and limit the amount of nitro-powder stored or kept in general supply stores in mining camps or mining towns where there is no municipal law governing the storage of same.

3. All oils and other inflammable materials shall be stored or kept in a building erected for that purpose, and at a safe distance from the main buildings and at a safe distance from the powder magazine, and their removal from said building for use shall be in such quantities as are necessary to meet the requirements of a day only.

4. No person shall, whether working for himself or in the employ of any person, company or corporation, while loading or charging a hole with nitro-glycerine powder, or other explosives, use or employ any steel or iron tamping bar; nor shall any mine manager, superintendent, foreman or shift boss, or other person having the management or direction of mine labor, allow or permit the use of such steel, iron or other metal tamping bar by employees.

5. All old timbers removed shall, as soon as practicable, be taken from the mine and shall not be permitted to decay underground.

6. No person addicted to the use of intoxicating liquors, nor under 18 years of age shall be employed as hoisting engineer.

7. All machinery for the purpose of hoisting from or lowering into metalliferous mines employees and material, shall be equipped with an indicator, geared positively to the drum shaft, and so adjusted with dial or slide as to move a target or indicator and thereby at all times show the exact location of the cage, bucket or skip. Said indicator to be so placed near to and in clear view of the engineer and to be free of gong, bells or other automatic attachments.

8. All mines employing steam and other hoisting power, and equipped with cage or skip, shall, when hoisting material from two or more levels, employ a man to be known as a "cager," whose duties shall be to load and unload said cage or skip at said levels and to give all signals to the engineer.

9. There shall be established by the commissioner of mines a uniform code of signals, embracing that most generally in use in metalliferous mines, and the commissioner shall have the power to enforce the adoption of such code of signals in all mines using hoisting machinery. The code of signals shall be securely posted, in clear and legible form, in the engine room, at the collar of the shaft and at each level or station.

10. All mines having but one exit and the same covered with a building containing the mechanical plant, furnace room and blacksmith shop, shall have fire protection. Where steam is used, hose of sufficient length to reach the farthest point of the plant shall be attached to feed pump or injector and the same kept ready for immediate use. In mines where water is not available, chemical fire extinguishers or hand grenades shall be kept in convenient places for immediate use.

11. All persons shall be prohibited from riding upon any cage, skip or bucket loaded with tools, timber, powder or other material, except for the purpose of assisting in passing same through shaft or incline, and then only upon special signal.

12. All persons giving or causing to be given false signals, or riding upon any cage, skip or bucket upon signals that designate to the engineer that no employees are aboard, shall be deemed guilty of a misdemeanor under this act.

13. All shafts more than 50 ft. in depth, equipped with hoisting machinery, shall be divided into at least two compartments, one compartment to be partitioned off and set aside for a ladderway. The ladders shall be made sufficiently strong for the purpose demanded, and, in vertical shafts, landings shall be constructed not more than 20 ft. apart, said landings to be closely covered, except an opening large enough to permit the passage of a man; said ladders shall be inclined at the most convenient angle which the space allows, and shall be firmly fastened and kept in good repair. In all incline shafts the landings shall be put in as above described, but a straight ladder on the incline of the shaft. Ladders in upraises and winzes shall be likewise provided and kept in repair, but where winzes connecting levels are used only for ventilation and exit, only one such winze on each level need be equipped.

14. Shafts equipped with buildings and machinery, with only the working shaft for exit, shall be divided into at least two compartments,

one of which shall be tightly partitioned off and used for a ladderway, as hereinbefore provided for. Said ladderway shall be securely bulkheaded at a point at least 25 ft. below the collar of the shaft, and below this bulkhead a drift shall be run to the surface, if location of drift is upon side hill, or well without the building and upraised to the surface, if upon a level.

15. Hereafter all tunnels or adit levels at safe distance from mouth of same shall connect with the surface, and be provided with safe and suitable ladders, and thus afford a means of exit in case of fire destroying buildings over the mouth of tunnel or adit level.

16. Employees engaged in sinking shaft or incline, shall at all times be provided with chain or other kind of ladder so arranged as to insure safe means of exit.

17. All shaft collars hereinafter constructed shall be covered and so arranged that persons or foreign objects can not fall into the shaft. When a mining cage is used, a bonnet which raises with the cage, and falls back into place when the cage descends, shall be used. This bonnet or shaft cover need not be tight beyond what would exclude anything from falling into the shaft that would endanger life, and the cage shall also be equipped with safety clutches and a steel hood, or bonnet, oval in shape, if solid, and if divided in the middle and hinged at the sides, the angles of the sides when closed shall not be less than 45°, nor the steel less than 3/16 in. thick. When wooden doors are used, the shaft must be housed in and covered and said doors so constructed as to stand at an angle of not less than 45° pitch, when closed, hinged at the lower sides, and opening upward, or outward, and said doors shall not be less than 4 in. in thickness.

18. All stations or levels shall, when practicable, have a passageway around the working shaft, so that crossing over the working compartment can be avoided. At all shaft stations a guard rail or rails shall be provided and kept in place across the shaft, in front of the level, so arranged that it will prevent persons from walking, falling or pushing a truck, car or other conveyance into the shaft. All winzes and mill holes extending from one level to another shall be covered or surrounded with guard rails, to prevent persons from stepping or falling into the same.

19. Where any shaft is sunk on a vein, ore shoot or body, a pillar of ground shall be left standing on each side of the shaft of sufficient dimensions to protect and secure the same, and in no case shall stoping be permitted up to or within such close proximity to the shaft as to render the same insecure, until such time as the mine is to be abandoned and said pillars withdrawn.

20. All abandoned mine shafts, pits or other excavations endangering the life of man or beast must be securely covered or fenced.

21. Any person or persons removing or destroying any covering or fencing placed around or over any shaft, pit or other excavation, shall be deemed guilty of a misdemeanor under this act, the penalty to be a fine not exceeding $300, or six months' imprisonment, or both.

22. Any person or persons operating any metalliferous mine or mill, and employing 5 or more men, shall report the same to the bureau of mines and state when work is commenced and when stopped; and mines working continuously shall report on or before December 1st of each year, with the names of the owners and managers or lessee in charge of the work, the postoffice address, the name of the claim or claims to be operated, the name of the county and mining district, together with the number of men employed, directly or indirectly, the same being classified into miners, trammers, timbermen, ore assorters, mill men, teamsters, etc.

23. Any owner, lessee, manager, superintendent or foreman in charge of any metalliferous mine who shall wilfully misrepresent or withhold facts or information from any inspector or other officer of the mining bureau regarding the mine, such as length of time timbers have been in place, or making any misrepresentation tending to show safety when the reverse is true, shall be deemed guilty of a misdemeanor, and upon conviction shall be fined in any sum not less than $100 nor more than $300.

24. Strangers or visitors shall not be allowed underground in any mine, unless accompanied by some owner, official or employee deputized to accompany them.

25. Notice of the maximum number of men permitted to ride upon or in the cage, skip or bucket, at one time, shall be posted at the collar of the shaft and at each level. All men or employees riding upon or in an overloaded cage, skip or bucket, as provided in notice so posted, shall be guilty of a misdemeanor, and upon conviction fined not less than $5 nor more than $50.

CYANIDE POISONING.*

By Dr. J. Loevy.

The sad occurrence at the New Comet Gold Mining Company, resulting in the death by cyanide poisoning of the assayer, Mr. Thomson, involuntarily conduces to certain reflections, and considering that a large amount of attention has been paid by the leaders of the industry to hygienic questions in connection with mining life, a few comments on the special case referred to above may not be out of place.

From the reports in the newspapers it transpires that Thomson, in order to refresh himself, intended taking a drink of condensed water, and, very naturally, the question arises, why should he have inclined towards such a flat, tasteless and unrefreshing liquid? The answer possessing the greatest probability is that there was no good drinking water available and that, having to choose between impure drinking water and condensed water, he took the latter as being the smaller of two evils. If this theory is correct, it follows that the sad accident would not have happened if there had been good drinking water at his disposal. I am well aware of the difficulty existing at the majority of our mines in supplying the staff with good drinking water, but thanks to the progress of hygienic science this difficulty can, to a great extent, be overcome by the use of filters, of which there are now several absolutely reliable kinds to be had at a cheap price in the local market. I think it should be compulsory for each mine in a position to obtain good natural drinking water, to have filtering arrangements for the use of the staff. Condensed water for drinking purposes should be forbidden to employees, as is the case in many European industrial establishments, owing to a certain danger always connected therewith.

A second point of the greatest importance is the following: From the fact that Thomson died as late as 45 minutes after his fatal mistake I come to the conclusion that the quantity of cyanide taken by him must have been very small, as otherwise death would have been almost instantaneous. Thus I feel almost sure that the life of the poor fellow could have been saved had help been administered to him immediately and in a rational manner. The rapid deadly action of cyanide is due to the fact that, owing to acid always being present in the stomach, free hydrocyanic acid is immediately formed, which, by entering at once into the blood, acts as a strong blood poison. Any antidote administered calculated to counteract the poison in the stomach itself (ferric or ferrous salts) will have no effect whatever, as many instances have shown. Very little is known of the action of hydrocyanic acid in the blood, but authorities agree on this point that hydrocyanic acid deprives the tissues of their capability to absorb oxygen, even if this latter is present in a large quantity. Cyanide poisoning is, therefore, according to Kobert, a suffocation in the presence of oxygen, a theory which I can fully confirm from personal experience, as, in September, 1894, I was myself almost the victim of cyanide poisoning in my laboratory. It follows from the above that, in the case of cyanide poisoning, an antidote can only be expected to have effect if immediately administered and incorporated into the blood by subcutaneous injection. The only chemical which, according to practical experience, can be considered for this purpose, is peroxide of hydrogen. Kobert was the first to draw attention to this, and, as the result of numerous physiological experiments he recommends the subcutaneous injection of a 2 per cent. solution of peroxide of hydrogen as an almost infallible means of counteracting the effect of cyanide, provided, of course, that the injection is made immediately, or very shortly after, the introduction of the poison. Only lately several cases have been reported in Germany where human lives have been saved by this method of treating cyanide poisoning, and the subject has been already noted in previous issues of our "Journal."

It is a highly satisfactory, and I might say, surprising fact that, in spite of cyanide being handled in such huge quantities at the various Witwatersrand mines, only very rarely are cases of cyanide poisoning heard of. This fact, however satisfactory, should not permit managers to allow a feeling of safety to be produced. The danger always exists, as the accident referred to clearly shows, and, acknowledging the everyday existing possibility of cyanide poisoning, one would certainly not be asking too much that provision for immediate rational help should exist on every cyanide plant. I consider safety can be provided for in the following manner: A certain quantity of pure peroxide of hydrogen, distilled water, and a Pravarz syringe should be kept in every cyanide plant, and all workmen on the plant should be made acquainted with the method of preparing a solution of the required strength and of injecting it subcutaneously—a practice which any sensible man can readily acquire. The peroxide of hydrogen should be kept in small bottles containing about ½ oz., with tight fitting glass stopper, and kept in the dark to prevent decomposition. Considering that provisions have been made in all large industrial establishments to render first surgical aid in the case of accident, I think that a provision as suggested above against cyanide poisoning is just as well called for in cyanide plants. Personally, I am convinced that Mr. Thomson would be alive to-day had such an arrangement been in existence at the New Comet Mine.

* From the "Journal" of the Chemical and Metallurgical Society of South Africa.

COAL EXPORTS OF JAPAN.—The total exports of coal from Japan during the year 1898 are reported by the customs department at 2,195,090 tons, against 2,103,072 tons in 1897. This shows an increase of only 92,078 tons, or 4.4 per cent., last year.

KIESELGUHR IN IRELAND.—At a recent meeting of the Royal Dublin Society Mr. J. Holms Pollock read a paper on the large deposits of kieselguhr in County Antrim. They occur on both banks of the lower Bann, and are of exceptional purity. Analysis shows the kieselguhr to be of good quality and suited for many industrial purposes, but not for making dynamite.

ANTIMONY IN BURMA.—According to "Indian Engineering," a concession for working antimony mines in the Amherst District, in Burma, has been granted to a Dutch merchant. Large quantities of antimony ore containing gold have been discovered by him. But the place is very sparsely inhabited, and the cost of bringing the ore by elephant to a place where it can be shipped to Moulmein is excessive. Machinery to crush the ore on the spot will be brought into operation at the close of the rains in October. The reef of antimony is said to extend for some 6 or 7 miles on the side of a hilly range, three days' journey from a navigable creek, and about as many from the Siamese frontier.

AGRICULTURAL SULPHATE OF COPPER.—The report of the chemical committee of the Royal Agricultural Society of Great Britain, presented at the last meeting, calls attention to the fact that sulphate of iron colored blue with Prussian blue is being sold to farmers under the name of "agricultural sulphate of copper." An instance is given in which a member of the society went to a local pharmaceutical chemist and asked for sulphate of copper, for which he paid 3d. a lb. for 20 lbs. Dr. Voelcker analyzed it, and found it consisted of sulphate of iron, 90.94 per cent.; sulphate of copper, 9.02 per cent.; and insoluble matter, 0.04 per cent. In the correspondence which followed the chemist endeavored to justify himself by saying that sulphate of copper was an article of very variable composition, and that no maker would guarantee its quality. Commercial pure sulphate of copper is an easily obtainable article, and is sold on the basis of containing 98 per cent. of crystallized sulphate of copper, and there can be no excuse for selling such a grossly adulterated article as that mentioned in the above case.

THE COPPER RESOURCES OF CALIFORNIA. III.—THE COPPER BELT OF THE SIERRA FOOTHILLS.

Written for the Engineering and Mining Journal by Herbert Lang.

Of the two great copper-bearing formations of California, in which are situated the most of the mines which are important through their past or prospective productiveness, one—the porphyry formation of Shasta County and vicinity—has been described with as much accuracy and minuteness as the state of development will admit at present. The other—the Foothill Copper Belt—remains to be described. It is with the latter mineral field that the history of the copper industry, as far as it has been developed in California, is mainly identified. It was more than 30 years ago that copper mining was entered upon first upon the Pacific Coast.

The copper belt is remarkable in many respects. I do not recall any metalliferous formation of such regularity and longitudinal extent. There is a row of mines and outcrops extending from Fresno County on the south, to Nevada County on the north, a distance of not less than 170 miles, throughout the whole of which the copper-bearing formation extends with reasonable sameness and something of regularity. From a geological point of view the formation is much more interesting than that of the Shasta deposits. In the one case we have a number of unconnected lodes, or more properly lenses, of metalliferous ore embedded in and surrounded on all sides by porphyry. In the other the containing rock is amphibolite schist, in which the copper minerals exist in the form of veins, with more or less complexity in their relations to each other and to the containing rocks. In a majority of cases the schist forms both walls, but it happens almost invariably that the lodes occur in close juxtaposition with other varieties of rock, sometimes metamorphic, but prevailingly eruptive. It is true that in some of the ore exposures, like that of Spenceville, there is a marked approximation in character to such pyrites lenses as the Rio Tinto, and it may be, to that of Iron Mountain; but the typical copper lode of the Foothill Belt conforms more nearly to the definition of a fissure vein, usually with well marked and even polished and slickensided walls, etc.

Whoever has given thought to the geology of the Sierras cannot fail to have been struck by the curious and unusual parallelism of the visible terranes upon their western slope. We find the usual granitic axis of the range flanked upon the west by extensive exposures of Jurassic slates (the Mariposa formation) whose trend is parallel to that of the range, and therefore north by west. This is the home of gold-mining, for here is the Mother Lode itself, included in the slates and parallel, very roughly speaking, with them and with the mountain range itself. Flanking the slate upon the west are the amphibolite schists, under which designation come sundry local and mistaken terms more useful to the miner than to the geologist, and by which various rocks of this series were formerly known. The amphibolite belt has a variable width, and is more or less interrupted by other rock formations, some of which very probably have some relation to the included copper deposits. Especially is this true of the diabases, porphyrites and serpentines, renowned elsewhere as copper-bearing formation. West of the amphibolite schists and still maintaining a rough parallelism therewith, comes another belt of Mariposa slates, narrower than the eastern one, and less persistent longitudinally. Quartz veins are abundant, but much less important than in the eastern belt. We mark to the westward of this again a second amphibolite formation, not devoid of copper, as we shall later show.

Within these extensive belts many local variations in the character of the copper deposits occur. Gold and silver are found in notable quantities in some of the mines, while the majority are devoid of those metals. Zinc is a common constituent, while I believe that it is never found to reach a troublesome proportion. There is a little lead in one or two of the worked mines. Sometimes copper oxides and carbonates occur in small quantity, but rarely; while native copper is a common constituent of many, occurring in notably large and pure sheets and masses in such mines as the Satellite. Almost all the copper minerals are found, here and there, but the most valuable, the prevailing mineral, in fact, is chalcopyrite, into which all the developments proceed when depth is reached. The general course of succession of minerals is that common to copper mines the world over. There is a portion of highly oxidized material on or near the surface entirely devoid of copper, in which iron oxides are the predominant mineral, but carrying, often enough, some gold and silver, but not usually sufficient to make it a workable ore. Beneath this, at a depth governed by the conditions of oxidation, come more transition products, containing some copper, usually in the metallic form. Still lower we come to oxidized copper minerals, often very rich, and consisting usually of the dark amorphous material which the miners are apt to call "black oxide," but which varies largely in composition, from melaconite on the one hand to impure copper glance on the other, and has so many accidental impurities, such as iron, water, etc., that its character can only be shown by chemical analysis. This stuff is often extremely rich, the copper reaching 60 per cent. at times, and constitutes a valuable ore, if only there were more of it. It usually occupies the line of division between the fully oxidized substances above and the unchanged sulphides below. The sulphides throughout the belt derive their value from the intermixed chalcopyrite as a rule, and it is my impression that the ore is better described by calling it chalcopyrite mixed with pyrite, than by using the term cupriferous pyrite. As to the Shasta copper deposits, I have intended to convey the impression that the prevailing ore was cupriferous pyrite, verging in places into chalcopyrite. I make the distinction that in the Foothill Belt it is chalcopyrite, pure in some favored spots, but as a rule mixed with pyrite. The waste material in the lodes consists in some mines of quartz; in others of more or less altered country rock. In the Copperopolis mines the lode consists of alternate bands of amphibolite schist and pyrites; the whole attaining a great width, while there were many feet of solid pyritic ore unmixed with waste in the older stopes. In the Copper King Mine, the southernmost of the great belt, the ore vein shows at one point a width of 15 ft. of unmixed sulphides averaging 7 per cent. of copper. This thickness is much exceeded in the Spenceville Mine, where the ore mass has a width of no less than 40 ft., averaging 4 per cent. copper, as I am informed. Other lodes possess a still greater width, but I am not aware of any whose burden consists exclusively of solid sulphides which surpass these dimensions. The Satellite Mine at Campo Seco, has, it is true, some 30 ft. of pay ore; but this is much mixed with quartz and other gangue matters, which constitute a considerable portion of the lode.

Thousands of locations have at one time and another been taken upon the copper belt, and much work done. A dozen mines of importance have been developed, and there are as many more which give promise of becoming such. The heaviest producers in past times have been those at Copperopolis and Campo Seco, in Calaveras County, and Spenceville, in Nevada County, which have been the scene of extensive and at times lucrative operations. Back in the sixties, when the first copper excitement raged in this State, metallurgical processes were introduced

PEON PACKING SQUARE TIMBER.

CAVE IN FRONTERIA MINE, MEXICO.

MINING SCENES IN MEXICO.

for the treatment of the ores, and the first water-jacket furnaces that we have certain and accurate records of were built to smelt the ores of the copper belt. The remains of several of these old plants are still in existence, though of course out of use. On the bank of the Mokelumne, at Campo Seco, the curious traveler may see and examine the relics of one of the first attempts at blast furnace smelting in the United States, most remarkable for the scarcity of slag and the abundance of "sows" produced.

The working of the copper mines divides itself into four stages, marked as follows: First, the stage of initial exploration and development, during which large quantities of rich oxides and sulphides were shipped to foreign ports or reduced to matte in rude furnaces of small capacity and uncertain output. These operations came abruptly to a close about 1870, when copper fell suddenly to half or two-thirds its former price and made the work unprofitable. Then succeeded, but at a distance of several years, a period during which a few of the mines began to be worked again, and the process of leaching was introduced and followed for some years with only fair results. The large heaps of leached ore at Copperopolis, Campo Seco, Newton and Spenceville are lasting evidence of the extent to which this process was carried and also of the imperfection of its results. The ores were piled upon wood and heap-roasted, the process extending over several months. Following this they were treated with water, by which the copper, made partially soluble by the roasting, was fractionally leached out as sulphate, and precipitated by means of scrap-iron, the product being cement copper; which, owing to refinement introduced into the work, was of exceptional quality and commanded a high price. This work is still proceeding, but in a moribund way, no fresh ore being mined for the leaching; but the old heaps yield a less and less quantity annually, the failing tribute of an expiring industry.

About a decade ago smelting operations were renewed at two points in the belt, namely, at Copperopolis and Campo Seco, large Orford furnaces of brick and without water-cooling, being installed and run for some time. A fair degree of success was apparently met with, and slag dumps of respectable size may be seen there, from which one may judge of the extent of the operations. A few months later these efforts came to an end and the works shut down. It is easy to discover the causes which prevented a full measure of success, in that the product was not sufficiently concentrated. The process employed embraced roasting in heaps and smelting the roasted material, producing matte of an average content of some 40 per cent., which was shipped east for refining, at pretty high rates. The shipping and refining charges ate up the profits, and the works shut down. They should have made black copper.

From my knowledge of the work carried on along the belt I should imagine that fully 500,000 tons of copper ore must have been mined, first and last, yielding very likely 50,000 tons of metal, an average, let us say, of about 1,500 tons a year, an amount far below the real capacity of the mines even under the difficult conditions which prevailed during this era of high costs and low returns.

Now, when copper has advanced so excessively in price and when mining and metallurgical skill are more common, and transportation has become easy, there is a new revival of interest and the mines of the belt are entering upon an area of rapid exploitation. Stimulated by the high prices of the metal, and by the feverish anxiety with which copper properties are being sought, work has begun on scores of claims which have not been touched for a generation. Properties, good, bad and indifferent, are held at high, often prohibitory prices, and any and every prospect hole that shows a tint of green or blue is placed on the market as a copper mine that only requires development to become a second Anaconda. Under these circumstances a great many worthless claims will no doubt find a market, while many future producers are being placed in condition, smelting works built and an active, and, it is to be hoped, prolonged period of productiveness entered upon.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

WHAT IS NOT EVIDENCE OF MINING PARTNERSHIP.—Evidence that a miner worked for the owner of a mining lease as a common miner, without exercising any authority or ownership, and without being consulted as to any operations; that the operations were carried on at a loss, which the owner never requested the miner to share, is insufficient to establish a mining partnership between the lease owner and the miner. Evidence that a person who had negotiated the sale of a mining lease agreed to take an interest in it for the commission due him, it not appearing what that interest was, and no part of the lease being assigned to him, is insufficient to show a partnership by agreement between the parties.—Calet vs. Coggswell (55 Pacific Reporter, 939); Court of Appeals of Colorado.

RIGHTS OF REAL PARTIES IN INTEREST IN MINING PROPERTY.—Where the owner of certain mines leased them to a corporation, and at the same time, as a part of the same transaction, sold and conveyed to the agent of the corporation both real and personal property used in connection with the mines, conveying both by the same deed, containing covenants of general warranty, and of seizin, the grantor having knowledge that the purchase was made for the corporation, and that it paid the purchase money, but the agent taking the title in himself for purposes of his own, and afterwards conveying to the corporation, such company is entitled to the benefits of the covenants both as to the real and personal property, and may set off in a court of equity, as against a judgment recovered against it for rental of the mines, damages accruing from a breach of the warranty by reason of a failure of its title through a prior mortgage given by the grantor, in the lease to the company and the deed to the agent.—Central Appalachian Company vs. Buchanan (89 Federal Reporter, 454); United States Circuit Court of Appeals.

ABSTRACTS OF OFFICIAL REPORTS.

Mason & Barry, Limited, Portugal.

The report of this copper mining company for the year ending December 31st, 1898, shows that the profits from the operation of the San Domingos mines, Portugal, were (after charging £30,649 royalty) £45,811. Dividends on La Sabina Company stock were £8,202; interest and miscellaneous, £6,513; making a total of £60,526. The general expenses in England were £7,960, leaving a balance of £52,566. The surplus from the previous year was £6,372, and £4,500 was written off the book value of La Sabina shares; leaving a balance of £1,872, which added to the surplus above, makes a total of £54,438. From this a dividend of 5s. per share, or 12½ per cent., has been paid, requiring £46,293, and leaving a balance of £8,145 to the current year's account.

At the close of the year the stock of ore, copper, etc., were valued as follows: Ore at cementation works, £80,120; ore ready for shipment, £24,827; copper precipitate, £10,770; total at mines, £115,717. Stocks in England were £52,588, bringing the total up to £168,305.

The total quantity of ore broken and raised at the mine in 1898 was 169,775 tons, against 177,549 tons in 1897; a decrease of 7,774 tons, or 4.3 per cent. The shipments for the year, including ore from the cementation works, were 285,441 tons, against 267,290 tons in 1897; showing an increase of 18,151 tons, or 6.9 per cent. The quantity of ore (pyrites) sold and invoiced for its sulphur value during 1898 was 284,880 tons, as against 272,498 tons in 1897; an increase of 12,382 tons, or 4.6 per cent. The average price of copper during the year was £2 14s. a ton greater than in 1897, and £4 18s. 6d. higher than in 1896.

Philadelphia Company, Pennsylvania.

This company owns a large number of gas wells in Western Pennsylvania and supplies natural gas to Pittsburg and the adjacent cities. The report is for the year ending March 31st, 1899. The receipts for the year were as follows: Gas sold, $1,558,097; oil, $115,071; dividends, etc., $63,383; total, $1,736,551. The expenses were: New wells, $156,315; new pipe lines, $236,269; rents, $166,868; repairs, $166,870; operating and taxes, $294,086; rentals and interest, $247,703; total, $1,268,111. This left a surplus of $468,440, from which the sum of $300,000 was paid in dividends, leaving a balance of $168,440 to surplus account.

The company has $8,100,000 common stock, $3,986,850 preferred stock and $4,000,000 bonds. It holds stock of other companies valued at $7,668,659.

The report says that during the year the company acquired by purchase the entire capital stock of the Mansfield & Chartiers Gas Company and the controlling interest in the capital stock of the Consolidated Gas Company, of Pittsburg, the Chartiers Valley Gas Company and the Allegheny County Light Company. To provide for these purchases the common stock of the company was increased by the issue of 12,000 shares; first mortgage bonds were created by the company, of which $4,000,000, par value, were issued and sold, and preferred stock was also created, of which 800,000 shares of the par value of $7,000,000 were authorized to be exchanged for common shares of the Consolidated Gas Company, of Pittsburg, subject to the payment of $7.50 per share, which has been placed in a special fund for the purpose of acquiring the floating indebtedness of the Chartiers Valley Gas Company and the Allegheny County Light Company, thus relieving these companies from the pressure of this indebtedness and placing them in control of the Philadelphia Company. The purchase of the controlling interest in these companies insures harmonious action, and the dividends upon their shares will add largely to the revenues of the Philadelphia Company. None of these dividends appear in the report of earnings. By the acquisition of the stock of the Chartiers Valley Gas Company the share of earnings paid as rental to that company will almost entirely inure to the benefit of the Philadelphia Company; this would have amounted, out of the earnings of the past fiscal year, to $197,808.

The company sold during the year a total of 11,729,512,000 cubic feet of gas, being an increase of 9,855,000 cubic feet, with additional receipts from that source of $147,258. These additional receipts have been occasioned by increased domestic consumption, making the average earnings per 1,000 feet higher than in the previous year.

Tennessee Coal, Iron and Railway Company.

The report of this company for the year ending December 31st, 1898, shows that the company has outstanding $1,000,000 preferred and $20,000,000 common stock. The bonded debt, less sinking funds, amounts to $9,179,998. The bonded debt was decreased $180,500 during the year. The floating debt, less cash assets, also shows a decrease of $108,644.

The profit and loss account shows credits as follows: Mining and manufacturing, as above, $823,383; profit on interest in Robinson Mining Company, $45,000; total, $868,383. The deductions were: Interest charges, $616,434; relining furnace account, $8,957; miscellaneous, $18,017; totals, $643,408. This leaves a surplus of $224,975—from which is to be deducted a debit balance of $127,924 brought forward from the previous year; leaving a balance of $97,051 at the close of the year.

The total net earnings from mining and manufacturing compare as follows:

	1897.	1898.	Changes.
Coal and Coke	$232,796	$255,954	I. $23,158
Pig iron	24,094	323,194	I. 299,100
Store sales	163,824	171,541	I. 7,717
Rents	59,653	55,842	D. 3,811
Machine shops, royalties, etc.	13,180	16,852	I. 3,672
Totals	$493,547	$823,383	I. $329,836

The coal operations of the company showed the following net results, all profit:

	Coal and Coke.	Store, rents, etc.	Totals.
Pratt Mines	$186,876	$56,641	$243,517
Blue Creek	19,187	43,601	62,788
Blocton	28,238	41,385	69,623
Tracy City	12,106	8,668	20,774
Whitwell	5,572	16,044	21,616
Totals	$251,979	$166,339	$418,318

The blast furnaces and iron operations showed profits as in the following table:

	Iron.	Store, rents, etc.	Totals.
Alice Furnaces	$49,156	$3,037	$52,193
Ensley	110,991	19,423	130,414
Bessemer	158,475	38,955	197,430
Oxmoor	6,444	6,981	13,425
South Pittsburg	3,484	8,016	11,500
Totals	$328,550	$76,412	$404,962

The production of materials by the company during the year included 3,679,534 tons coal, 992,697 tons coke and 549,457 tons pig iron; each item showing an increase over the previous year. As to the present position and future of the company, the report makes the following statements:

"The erection of the open-hearth steel plant at Ensley, which will have a capacity of at least 1,000 tons of steel products per day, is going forward as rapidly as possible, but has been somewhat delayed by the extraordinary demand for materials from every direction and by the unheard of severity of the weather, the winter having been the longest and coldest ever experienced in this part of the South. . . .

"We have secured control of the stock of the Robinson Mining Company, and by reason of that are able to so direct the operation of the mines worked by that company as to make them more profitable to this company; and since the close of the year we have made a most advantageous trade by which we become the owner of the entire capital stock of the Smith Mining Company, upon terms which are certain to result in great good to this company in a financial way and by placing it in position to control its supply of material.

"After considerable negotiation we closed contracts with parties, afterwards incorporated as the Alabama Steel and Wire Company, for the erection of a wire rod, wire and wire nail plant at Ensley, and for the supplying to them for a period of years of a large tonnage of billets at fair prices. This insures our new steel plant one regular and large customer, and with the custom of the Southern rolling mills and of the railroads for our rails, there seems no doubt but that we will start out with almost enough trade in sight to run the steel plant to its full capacity. The advantages of such a situation are obvious.

"The Semet-Solvay coke ovens plant at Ensley was almost completed, 90 of the 120 ovens having been finished and put to work by November; but unfortunately a fire destroyed the greater part of their machinery and plant for handling the by-products late in December, and has interfered seriously with the working of the plant since that time, although they again have the 90 ovens working and hope to have the remaining 30 in shape in a short time. While we have not had a chance to make any long and uninterrupted use of the coke, we feel well satisfied that it will prove to be all that the officers of this company expected.

"In anticipation of the increased demand for iron for the steel plant and for the market, we have made many improvements at our furnaces and mines, the principal items being a battery of five Cahall boilers at Ensley furnaces and new haulages in the coal mines. Our engineer has devised and put in operation a new system of haulage, which we believe is in advance of anything yet attempted elsewhere, and which reduces the cost as well as enables us to work out a much larger territory from each mine opening than has heretofore believed to be possible, thus saving the expense of making new openings as frequently as would otherwise have to be done. . . .

"We will blow three additional blast furnaces on or about April 1st, and a fourth furnace will be ready for work later in April. Supplies of coke and ore will be had from our own mines for these additional furnaces, and with a continuation of the present demand, which seems likely, we will prepare another furnace and have it going by mid-summer. Looking to the future demand for basic iron for steel making at Ensley, it would be wise to erect at the Ensley furnace another stack (this additional stack not to be equipped with stoves, engines and boilers, but simply the furnace stack), so that four furnaces might be continuously kept in blast there."

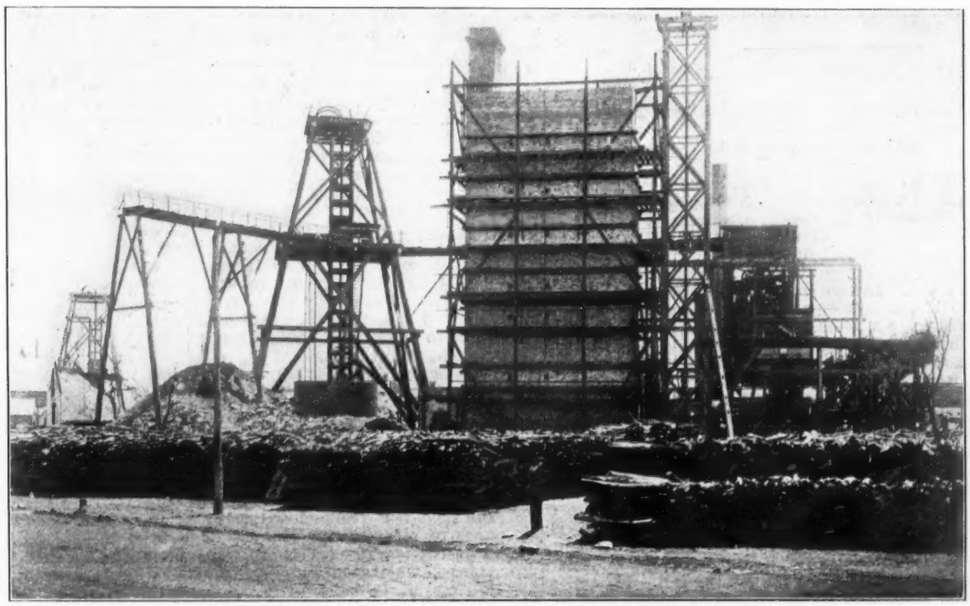
THE KALGOORLIE DISTRICT IN WESTERN AUSTRALIA.

By Our Special Correspondent.

The following figures show the exports of gold for the first three months of the year from Western Australia:

	1895. Oz.	1896. Oz.	1897. Oz.	1898. Oz.	1899. Oz.
January	18,687	16,459	20,384	95,395	110,090
February	15,509	17,922	32,526	53,739	100,565
March	19,619	13,084	40,296	73,380	106,093

The Kalgoorlie District still increases its output and the producing mines show a large output. The producing mines of to-day are the same as the producing mines of two years ago, and, unfortunately, the number does not increase, in spite of deep prospecting. Not a few of the shafts have been sunk to 500 ft., and some as deep as 600 ft., and although the lodes maintain their regular strike and size, yet they are devoid of values. A good discovery of mineral either north or south of the present area, would do much to stimulate development all through the district. The impregnation of the vein with gold within the "charmed circle" was doubtless due to the influence of dykes, both north and south, and at about right angles to the vein; beyond those dykes only a few pockets of ore have been found. A thorough geological report on this district is sadly needed, to ascertain whether parallel dykes enclose another set of veins, and to ascertain the extent, dip and form of the present lenticular masses. The Chamber of Mines and the Mine Managers' Institute meet monthly, and both are busy watching the Government to see that it passes no objectionable laws, and praying for the removal of the present unnecessary encumbrances and impediments. On this field perhaps more than any other is there a waste of mining experience.



ROASTING FURNACE, GREAT BOULDER MAIN REEF MINE, WESTERN AUSTRALIA.

Great doubts as to the successful treatment of these telluride ores have been expressed for many months past. Plants have been erected and should have been at work months ago, but only about to start just now. The Great Boulder Main Reef plant is now in successful operation.

The leaching of the roasted ore, which it was stated would not leach without classification and separation, on account of the large proportion of sulphate of lime forming a cement, has not at this mine, according to Mr. Marriner, the metallurgist, given any trouble. The ball mills at this mine are doing splendid work, the crushing capacity being about 60 tons a day through a 30-mesh. Ball mills are much preferred to rolls or Chilean mills in this camp, as they finish the product. The accompanying illustration is from a photograph of the roasting furnace at the Great Boulder Main Reef. It is 65 ft. high, and rectangular in shape, 12 by 30 ft., with a fireplace to the left of the furnace. This kind of furnace has done good work at Mount Morgan, in Queensland. It consists of a series of reverbatory furnaces, one above each other. The principle of the furnaces is low initial heat, with high terminal heat.

At the Lake View Consols the two Brown straight-line furnaces will soon be at work, of the type used in several of the Western States. These furnaces are 130 ft. in length, with two fire-places to each. The proposed method of treatment is as follows: Gates crusher, rolls, Chilean mills, and finish with ball mills. After roasting, the ore will be classified and separated, the coarser particles taken direct to the leaching vats, and the fines to the agitators and filter presses. A lot of 100 tons of telluride shipped from this mine to London last August averaged 24 oz. of gold to the ton. Mr. J. Sutherland is the metallurgist.

The Australia is busy with the erection of its 350-ton-a-day plant, its four Ropp furnaces now being complete. For crushing, the Stearns-Roger rolls are to be used. This plant will not be at work for some three months. The developments of the mine are truly marvelous. Mr. Grayson is metallurgist.

The Kalgoorlie Mine plant is but a repetition on a 200-ton scale of the Australia, and will take some three or more months to commence operations. At present the above are all the plants that have faced the sulphide problem, and no doubt most of the mines will want to see the result of these before further construction. Conflicting rumors and cables have been spread, and sent to London, Adelaide and Melbourne, of the failure of these plants before a start was made; the imaginary difficulties raised were legion, but the best posted metallurgists entertain no fear.

The filter-presses were decried in London and South Africa, but on this field they are doing good work, and at a minimum of cost. The method adopted at the Ivanhoe, with agitators and filter-presses is all that one could wish; it is a model plant for the treatment of these slimes.

The Great Boulder Milling Company's plant is being dismantled, not having done all that the inventor claimed. It is reported that the manager of the Boulder Perserverance, Mr. Ralph Nicholls, has gone to London to order machinery for a large sulphide plant. Mr. Nicholls favors the Argall furnace, at work at Cyanide, Colorado.

The Great Boulder Mine at the 600-ft. level has a large sulphide vein averaging from 2½ to 3 oz. per ton. This has been the premier mine of the camp, both as regards output and dividends, having paid last year $1,000,000 in dividends from 30 stamps. The Golden Horseshoe still maintains a monthly output of about 8,500 oz. from a 20-stamp battery and leaves fully ½ oz. in the tailings.

The Hannan's Star dry crushing and cyanidation plant has commenced work. This mine has not yet entered the list of producing mines, but an output for April may be expected. This plant consists of two ball mills, and the leaching and stock vats are of steel.

At the Coolgardie exhibition the mineral display is the center of attraction.

THE NEW YORK SLATE INDUSTRY.*

Written for the Engineering and Mining Journal by J. Nelson Nevius.

(Concluded from page 588.)

Near the Penrhyn mill is a small red quarry, located on the same bed as are the Mettowee quarries, and now idle. A mile east of the Penrhyn quarries, on the opposite side of the valley, are those of the Eagle Red Slate Company. These are the most northerly quarries on what the quarrymen term the "Granville red belt," but the same bed is probably exposed in the National quarries, previously described. Three of the four large openings are idle. The active quarry is about 250 by 90 ft. in area and 60 ft. deep. The cleavage dips 45° E., 5° S., and strikes S. 5° W. The east wall is unfading green slate, and on the west wall, which is a smooth cleavage surface for half the length of the quarry, is a most unique color effect. The upper 25 or 30 ft. of this surface is bright red, which gradually changes to the typical unfading green below that depth. A specimen of this material, collected for the New York State Museum from a point where the change in color occurs, shows the tendency toward red at one end and green at the other.

Both red and unfading green slates are quarried here, and the entire product is made into roofing material.

A half mile south of the Eagle quarries are those of the Nixon Red Slate Company, now owned by E. J. Johnson & Co.. There are three openings, the largest of which is about 250 by 100 ft. in area. The cleavage dip is 36° E., 10° S., and the strike is S. 10° W. Both red and unfading green roofing slate are quarried. The large quarry was operated during the summer of 1898, but was idle during the fall. The red quarries north of Granville, belonging to the Nixon Company and to Andrew Norton, are idle.

Thomas Williams operates a small red quarry 1 mile south of Granville. The cleavage dips 40° E., 20° S., and strikes S. 20° W. Considerable of the waste material from this quarry is used on the local roads. Slate is too soft and brittle to be a good road metal, and it has to be frequently renewed; but it packs to a smooth, hard surface, and most of the best roads about Granville are of this material.

A mile south of the Williams quarry are two small openings in the red slate bed. One of these, on F. Sweet's farm, is new, and although the cut is scarcely 10 ft. deep, a number of squares of excellent red slate have been produced. The cleavage dip is 38° E., 7° S., and the strike is S. 7° W. This opening is within a few rods of the Vermont line, and it is a curious fact that no trace of red slate has been found in that State.

The Old Dennison quarry, nearly opposite West Pawlet, Vt., which is now idle, shows the strike of the slate to be about the same as in the Williams and the Sweet quarries. The change in direction of the strike, just south of Granville, is indicated on the topography by a similar change in direction of the long axes of the hills. The westward trend of the slate belt carries the red slate west of the Granville meridian, and it outcrops in the village of Slateville, township of Hebron. The quarries of the Manhattan Red Slate Company are located here and they mark the southern limit of the red slate industry. The cleavage dip is 32° E., 7° S., and the strike is S. 7° W. The quarries are large and well located, and the product is of exceptionally unform color and grain. Apparently this is one of the most advantageous quarry sites in the region, but it is idle, due, it is said, to lack of capital to start after the late business depression, which greatly affected the slate industry in this region. Roofing slate from this quarry was awarded first premium at the Centennial Exposition at Philadelphia in 1876.

Two other small red quarries between Slateville and Granville are also idle. One mile northeast of Slateville J. J. McDonough has opened a new quarry for unfading green roofing slate. It is well located on a steep hillside, and is one of the few quarries that are being opened with a view to allowing the water to drain out, instead of pumping it out, as is the usual method. The quarry is small, but has cut a bed of excellent slate and has already produced a number of squares of fine roofing stock. The cleavage dip is 32° E., 9° S., and the strike is S. 9° W. From Slateville southward for 20 miles or more, nearly to Hoosick, are scattered abandoned quarries. In nearly all of them purple, green and variegated slates are exposed, but much of it is of poor quality. A few miles north of Salem, and in that township, are the Black Creek Valley quarries and those of the Excelsior Slate Company. Johnson's "History of Washington County" states that in 1877 the Excelsior Company shipped $12,000 worth of slate abroad, most of it going to England, Germany, South America and Australia.

Near the village of Salem quarries have been operated by John Dundon, L. M. Macefield, Mrs. John Toohe, Chas. Johnson and J. M. Williams. Near the village of Shushan quarries have been operated by Walter S. King and Wm. Dobbin, and a small opening made on the farm of Wm. McGeough. In all these quarries the cleavage strikes south-southwest and dips from 30° to 40° east-southeast.

The quarries operating in the fall of 1898 were as follows:

Name of Quarry.	Locality.	Product.	Color of Product.
National Red Slate Co.	Hatch Hill.	Roofing slate.	Red.
R. A. Hall.	"	Roofing, tiles and flour.	Red (and olive flour).
Flaherty & O'Brien.	"	Roofing slate.	Red.
H. H. Mathews & Co.	Hampton.	" "	Red, unfading green and purple.
Welsh Red Slate Co.	"	" "	Red.
Jones & Williams.	Jamesville.	" "	Unfading green, purple and variegated.
National Red Slate Co.	Raceville.	" "	Red.
Williams & Allen.	N. of Middle Granville.	" "	"
Penrhyn Slate Co.	Middle Granville.	" "	Unfading green, purple and variegated.
Eagle Red Slate Co.	"	" "	Unfading green and red.
Nixon Red Slate Co.	"	" "	" "
Thomas Williams.	Granville.	" "	Red.
F. Sweet.	"	" "	"
J. J. McDonough.	Slateville.	" "	Unfading green.

Red slate is the most expensive, the other colors following in this order: Purple, unfading green, sea-green (from Vermont) and variegated. The color of red slate is as nearly unchangeable as anything can be. It shows no perceptible change after years of exposure to the sun and atmosphere. The sea-green slate fades unevenly; after a year's exposure as many as six shades of color appear. The other colors all change somewhat, but if the slates are well matched when laid the change of color is fairly uniform and passes unnoticed.

A specimen of the red roofing slate of Washington County* was tested and found to have a specific gravity of 2.84, equivalent to a weight of 177 lbs. per cubic foot. It contained 1.87 per cent. of ferrous oxide, and 7.36 per cent. of ferric oxide. Its absorptive percentage was 0.15. It lost 0.07 per cent. in weight in the sulphuric acid solution test. It remained unchanged in tests of alternate freezing and thawing.

As to the age of the slate deposits, the red slates are a part of the Hudson River group and the others are of Cambrian age.

Sea-green slate is typically a Vermont product. It is part of the Georgia group, the lowest formation of the Cambrian system, and is quarried at many points, particularly between West Pawlet and Poultney. It is stated that the sea-green slate is confined to Vermont as closely as the red is confined to New York, though south of Granville they outcrop within half a mile of each other.

The great number of quarries which are either idle at present or are abandoned is due to several causes. The business stagnation of the past few years closed many of them and they have not yet been able to start again. Others have been located on beds which have proved to be of poor quality, or at too great a distance from shipping points. The recent extensive introduction of iron and terra cotta roofing materials has greatly damaged the slate industry, particularly in large cities. But the chief cause of failure appears to be the lack of capital to properly push the work, coupled with clumsy methods of quarrying and sharp competition in the market.

In the best of slate quarries the proportion of waste rock that must be removed to the marketable stock is enormous. This is a permanent expense, though the waste could find a limited market for use on the local roads. This would not only be a source of revenue to the quarrymen, but would also cheapen transportation for them. Some of the quarries, particularly in the Hatch Hill group, where they are located in a depression, are necessarily open pits, which require constant pumping. But many others are located on side-hills, where a cut or a tunnel could be cheaply run in from below, which would not only drain the quarry, but would provide a way for the removal of the slate and the waste by gravity, instead of by the slow and expensive method of hoisting, which is now in use. The initial cost of such an outlet would be something of a burden, but this would soon be repaid in an increased output and cheapened quarrying.

COAL IN NATAL.—The coal mining industry of Natal is making rapid strides, as will be seen by the following figures showing the output during the last six years in long tons: 1893, 129,639; 1894, 141,000; 1895, 160,115; 1896, 216,106; 1897, 243,960; 1898, 387,811 tons. The coal was furnished by about 13 mines.

SLATE IN TRANSYLVANIA.—According to A. Gesell, in the yearly report of the Hungarian Geological Office, the roofing slates of the Zalatna-Preszak District in Transylvania form a belt about ½ mile in width, beginning in the Bibarcz Valley, and extending thence to the Fenes Valley and beyond. Their coloration is bluish, greenish-grey and red, and they can be split into slabs as thin as 3 mm. Experts have pronounced them very nearly as good as the slates which come from Wales and from France; they can be bored and sawn through, and their behavior in regard to change of temperature is perfectly satisfactory. These roofing-slates are associated with sandstones and marl-slates, all of which are probably of early Tertiary age. The roofing-slate industry would be a new one in Hungary, and on the condition of applying competent technical knowledge and sufficient capital, the prospects before it are very good.

* We regret that, owing to a mistake of the pressman, the illustrations given with this article last week were transposed, the numbers of Figs. 1 and 2 being interchanged on page 587; and also those of Figs. 3 and 4.

"Bulletin New York State Museum," Vol, 2, No. 10, p. 281.

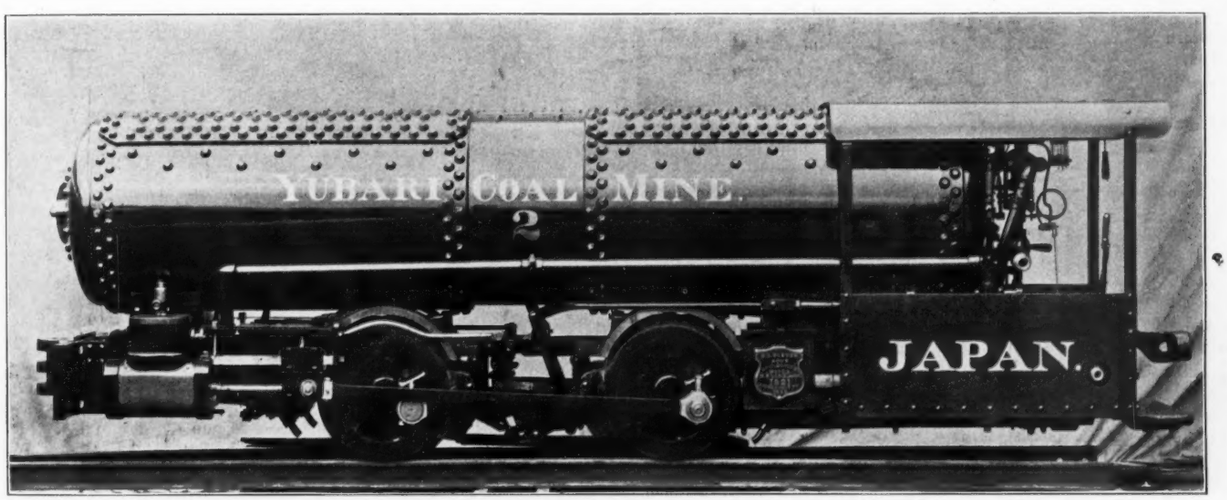
A COMPRESSED AIR MINING LOCOMOTIVE.

The accompanying illustration shows a mining locomotive operated by compressed air, recently shipped by H. K. Porter & Company in Pittsburg. It is one of three built for the Yuburi Coal Mine in Japan, and has all the recent improvements made in this class of machines.

The locomotive runs on a track of 19⅝ in. gauge and its extreme width is 3 ft. 3 in. The extreme height is 4 ft. 10 in., and the length over all is 14 ft. 10 in. The cylinders are 6 in. diameter by 10 in. stroke. There are four driving wheels, 22 in. in diameter, which are spaced 4 ft. between centers, and carry the entire weight, 12,500 lbs., in working order; giving a weight of 3,125 lbs. to a wheel.

The engine is of the usual compressed air type, the running gear resembling that of a steam locomotive, while the boiler is replaced by the reservoir or tank for carrying the air. The working pressure carried in the main tank is 800 lbs.; this is reduced by an automatic valve to a uniform pressure of 140 lbs. delivery to the auxiliary reservoir, from which the air is distributed to the cylinders through a specially constructed throttle valve. This locomotive is also fitted with re-heater arrangement. It has a very neat little air brake fitted to the driving wheels, and sand-boxes to sand the track for all wheels in both directions. The pressure gauges are provided with a safety lamp.

Three of these machines have been shipped to the colliery in Japan. The underground haul is about 6,500 ft. and extremely crooked. This shipment of three compressed air locomotives, with compressor, pipe line, charging stations, etc., to Japan is a very interesting object lesson of the quickness and readiness of the Japanese people to see and adopt the latest improved methods in mining. The coal mine is of large capacity, situated in the Northern Island, and the use of air haulage will enable the company to increase the output and reduce the operating expenses.



PORTER COMPRESSED AIR MINING ENGINE FOR JAPAN.

THE FOREIGN HEAVY CHEMICAL TRADE OF THE UNITED STATES.

With an increasing supply of raw material and cheaper costs of production through the use of improved appliances and processes we are gradually becoming more and more independent of foreign countries for our supplies of heavy chemicals. This fact is emphasized by the table given below, which shows that our importations have fallen off nearly 56 per cent. during the five years from 1894 to 1898. In the first quarter of 1899 the consumption was 43,115,205 lbs., as against 60,043,171 lbs. in the corresponding period of 1898, showing a decrease of 16,927,966 lbs., or 28 per cent.

In alkali the decrease has been most rapid. In 1898 the total imports were 98,046,580 lbs. against 212,398,453 lbs. in 1897, 239,607,784 lbs. in 1896, 379,045,218 lbs. in 1895, and 358,853,375 lbs. in 1894, showing a falling off in the five years of 260,806,795 lbs., or 72 per cent. Of these imports the United Kingdom furnished 85,539,300 lbs. in 1898, 192,540,000 lbs. in 1897, 222,630,000 lbs. in 1896, 352,440,000 lbs. in 1895, and 333,670,000 lbs. in 1894, showing that our receipts from that country have diminished about 74 per cent. during this period. The remainder of our imports were made from Continental countries. The following table shows the imports of the principal heavy chemicals last year, as compared with 1894:

The imports of alkali for the quarter ending March 31st, 1899, amounted to 15,242,795 lbs., showing a decrease of 16,478,191 lbs., or 52 per cent., as compared with the same time last year. Should the imports continue at the present rate the total for 1899 will be not far from 60,000,000 lbs., or about 38 per cent., less than the previous year. Of this total the United Kingdom may furnish about 45,000,000 lbs. This diminution is partly accounted for by the enforcement of the Dingley tariff, which places a duty of 0.375c. per lb. on soda ash, 0.2c. on sal soda, and ¾c. on caustic soda. On the other hand, we are building new works, and enlarging older plants, especially in the Middle West, and the time is not very distant before we shall be able to supply our own consumptive demand.

A noteworthy feature of the alkali trade has been the increased re-exports of the foreign article. In 1898 we shipped 5,485,202 lbs., or about 45 per cent., more than in 1894. The greater part was sent to the East, while a small amount went to the Central and South American States. The exports in the first quarter of 1899 amount to 1,316,115 lbs.

Chlorate of potash, notwithstanding the duty of 2½c. per lb., has held its position pretty well, and the consumption of the foreign article in this country in five years fell off only about 3 per cent. The imports came from the United Kingdom, Germany, France and Belgium. In 1898 they were 4,806,402 lbs., as against 6,508,350 lbs. in 1897, when speculators were actively laying up stocks for a rising market, 4,659,793 lbs. in 1896, 4,917,636 lbs. in 1895, and 4,599,969 lbs. in 1894. In the first quarter of 1899 the imports aggregated 243,723 lbs., showing a decrease of 737,791 lbs., or about 74 per cent., as compared with the corresponding period in 1898. At this rate the total imports in 1899 will show a considerable falling off from last year. The exports of chlorate of potash were small, amounting in 1898 to 25,150 lbs. only. In the first quarter of 1899 the exports amounted to 17,358 lbs. An increase is made possible by the larger production of our American works.

Bleaching powder is the only heavy chemical that we are not yet producing on a large scale, though at Niagara Falls, N. Y., we are making some, but the supply is limited. Consequently, instead of our consumption of the foreign article decreasing, it has increased in five years from 96,236,308 lbs. in 1894 to 108,248,623 lbs. in 1898, or nearly 12 per cent. In 1897 the imports were 99,491,335 lbs.; in 1896 they were 103,317,968 lbs. Of these imports the United Kingdom furnished 73,801,600 lbs. in 1898, or 68 per cent., the proportion having fallen gradually since 1895, when it was 86 per cent. The remainder was imported principally from Germany, Belgium and France. The imports in the first quarter of 1899 amounted to 30,481,140 lbs., of which the United Kingdom furnished 21,626,500 lbs., or 71 per cent. The duty on bleaching powder is 0.2c. per lb. The exports of this article are very small—only 28,605 lbs. in 1898.

Supplies of Foreign Heavy Chemicals in the United States.

Article.	Imports.		Exports.		In Warehouse, Dec. 31st.		Consumption.	
	1898.	1894.	1898.	1894.	1898.	1894.	1898.	1894.
Bleaching powder.....lbs.	108,462,828	96,256,251	28,605	19,943	185,670	.....	108,248,623	96,236,308
Soda ash.... "	67,973,939	295,826,589	4,246,673	99,886	979,961	3,060,672	62,747,305	292,666,031
Sal. soda.... "	5,090,768	25,474,285	1,272	2,000	.....	.....	5,089,496	25,472,285
Caustic soda "	24,981,873	44,772,512	1,237,257	2,929,473	1,214,836	1,127,980	22,529,780	40,715,059
Chlorate of potash.....lbs.	4,806,402	4,599,969	25,150	4,499	41,738	.....	4,739,514	4,595,470
Total.... "	211,315,810	466,929,606	5,538,957	3,055,801	2,422,135	4,188,652	203,454,718	459,685,152

QUESTIONS AND ANSWERS.

(Queries addressed to this department should relate to matters within the special province of this periodical, such as mining, metallurgy, chemistry, geology, mineralogy, machinery supplies, etc. As it is manifestly impossible to devote space to all the questions and notes constantly received, preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot here undertake to give professional advice on problems requiring special investigation and which should be obtained from a consulting expert; nor can we undertake to give advice about mining companies or mining stocks. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers should send their names and addresses. Anonymous questions will not be answered.—Editor E. & M. J.)

Bismuth.—Are there any smelting works in America which save bismuth when associated with gold, silver and some lead?—T. D.

Answer.—The smelting works in this country do not save bismuth when associated with such ores as you mention. The only metallurgical works which save bismuth and similar metals as by-products are those at Freiberg, in Germany.

Astronium.—Can you tell me who makes or handles a new metal called astronium?—S. G. F.

Answer.—We do not know anyone who makes or handles the metal you mention. You should apply to some of the firms who prepare and handle the rare metals and alloys. Perhaps some of our readers may be able to furnish the information.

Mineral Wool.—Where can I sell large quantities of mineral or rock wool in the East? Who are the large dealers who distribute to the trade or consumers?—J. L. M.

Answer.—The only large dealer in mineral wool is the United States Mineral Wool Company, of New York; and that company is itself a manufacturer, making the wool which it sells. You might communicate with any of the large supply dealers in New York, Boston or Philadelphia. The better plan, however, would be to advertise your mineral wool and so draw the attention of purchasers.

Graphite.—I forward samples of graphite from this vicinity, which will show the quality. Is there a market for it?—F. H. H.

Answer.—The specimens received appear to be amorphous graphite, and the quality is good, so far as can be judged from the inspection of a small quantity. There is a market for the material, if it can be furnished of uniform quality, free from impurities and in sufficient quantity to pay for working the deposit. Concerning the uses of this graphite you can consult "The Mineral Industry" and the files of the "Engineering and Mining Journal," where we have had frequent occasion to refer to this substance.

Antimony Ore.—I write concerning a property which is said to contain a vein of ore carrying 50 per cent. antimony, with no other metal. Who handles or buys such ore?—G. F. T.

Answer.—The only concern in the United States treating antimony ore on a large scale is Matheson & Company, of New York. There are some buyers for foreign parties who would take the ore if they can get it cheaply enough. The freight from Nevada, however, would be a serious item. Your best course would be to advertise your ore for sale in the "Engineering and Mining Journal," where buyers would be sure to see your offer.

See also the "Engineering and Mining Journal," April 15th, 1899, page 444.

Anthracite Coal.—Is anthracite coal mined elsewhere than in Pennsylvania? Is it used anywhere except in the United States?—F. J. P.

Answer.—Anthracite coal is found and mined in this country in Arkansas and Colorado, as well as in Pennsylvania. The quantities mined in those States are small. For their production see "The Mineral Industry," Volume VI., and the "Engineering and Mining Journal," January 7th, 1899. Anthracite is mined in Wales, where a considerable quantity is obtained yearly. Some of this coal finds its way to this country, and is sold in California. In France also some anthracite is mined and used. The anthracite deposits of Pennsylvania are, however, by far the largest known, and the quantity of this kind of coal mined there is very much greater than in all the rest of the world. We may add that anthracite has been found to exist in China and in Eastern Siberia, but the coal-fields in those countries are not yet developed to any extent.

Iron Ore (Limonite).—I have discovered iron ore in this vicinity in great quantities. Assays made at the School of Mines at Rolla, Mo., show the ore to be limonite, carrying 49.9 per cent. iron. How can such a deposit be worked, and what is the best way of managing it? Would it be best to sell the ore, or to put up a furnace to smelt it? What is the ore worth?—R. B. T.

Answer.—Your questions involve a number of points on which it would be impossible to give answers without an examination of the property. There are various systems of mining iron ore, and which is best suited to any case depends on location, nature and extent of the deposit and many other points. As to shipping the ore or putting up a blast furnace to smelt it on the spot, that also is a question to be determined only after careful examination of all the conditions. One must take into account the available supplies of fuel and flux, besides many other points. A blast furnace is an expensive construction, and its erection would require large capital. At present the general rule in this country is to take the ore to the fuel, and not the fuel to the ore. Thus, the Lake Superior ores are smelted chiefly in Western Pennsylvania and Ohio.

Your best plan would be to consult an expert and get an opinion based on full examination of the property before putting much money into it. You will then be able to act intelligently, to spend money to the best advantage, or to avoid spending it altogether, if there is no profit to be expected. Generally speaking, considerable capital is required to develop and work an iron ore deposit profitably.

As to the value of the ore, it depends upon several factors, besides the contents of iron. One important point is the composition of the ore; that is the quantity of impurities, such as phosphorus, silica, etc., which it may contain. Another, and very important point is location and cost of transportation. Iron ore, to be valuable or even available at all must be where it can be carried to the point where it is to be used at a moderate cost. There are large deposits of iron ore of excellent quality in this country which are unworked because the cost of carrying the ore to market would largely exceed its value. You will see, therefore, the need of much further investigation and expert examination before your questions can be answered.

COAL TRADE OF GERMANY.—Imports of fuel into Germany for the three months ending March 31st included 1,125,152 metric tons of coal (1,057,453 tons in 1898); 1,916,961 tons brown coal or lignite (2,039,303 tons in 1898); 106,125 tons coke (83,844 tons in 1898).

Exports for the three months included 3,362,644 tons coal (3,263,250 tons in 1898); 4,855 tons brown coal (4,318 tons in 1898); 500,948 tons coke (503,879 tons in 1898).

In addition to the coal and coke there were imported 19,633 tons of briquettes and 2,094 tons of turf; while 99,429 tons of briquettes and 1,120 tons turf were exported.

PATENTS RELATING TO MINING AND METALLURGY.

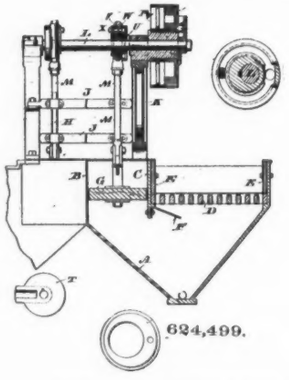
UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending May 9th, 1899.

624,495. COMPOSITE FUEL AND PROCESS OF MAKING SAME. Commodore O. P. Howell, Washington, D. C. Composed of pulverized coal, excelsior, rosin and fiber of the Mexican cactus.

624,499. ORE OR COAL WASHER. Albert I. Jones, Hancock, Mich. This washer consists of a plunger having a pitman in eccentric connection with a shaft, a boss extending laterally from one of the shaft-



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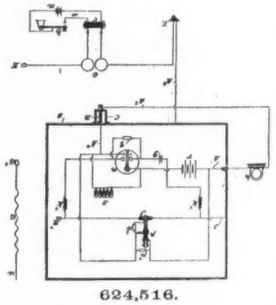


624,516.

bearings and provided with an eccentric bore in which the shaft has rotation, a pulley loose on the boss, a crank fast to the aforesaid shaft, and a pulley projection having play longitudinally of the crank.

624,507. ANCHOR FOR DREDGES. Henry C. Lehman, Middlebury, Ind. The combination with a post, of a jointed anchor-beam slidably confined on the post, a shoe connected to the outer extremity of the jointed beam, means for applying strain ot the joint of the sectional beam, and a locking device to sustain the inward thrust of the beam and shoe.

624,513. BATTERY ELECTRODE. Herbert S. Lloyd, Philadelphia, Pa. Assignor by mesne assignments to the Electric Power Development Company. The combination of clamping chill-ridges provided upon the oppositely-disposed sections registering with each other for supporting and binding the electrode strips, and strips of non-inflammable compressible material provided within the line of the chill-ridges in contact therewith to prevent leakage of the hot metal into the interior of the body of the mold.

624,516. APPARATUS EMPLOYED IN WIRELESS TELEGRAPHY. Guglielmo Marconi, London, England. Assignor to the Wireless Telegraph and Signal Company, Limited, same place. The combination of a transmitter, a receiver, an aerial conductor, a metallic box

containing the receiver, earth connections to one terminal of the transmitter and to the box, an interchangeable connection from the aerial conductor either to the other terminal of the transmitter or to one terminal of the receiver and a connection between the other terminal of the receiver and the box.

624,521, 624,522. CEMENT. Charles Myers, Akron, O. Assignor, by direct and mesne assignments, to Michael J. Murphy, same place, and H. Rosenbaum, Cincinnati, Ohio. A compound consisting of sulphur and arsenic, and another consisting of glue, corrosive sublimate and strychnine.

624,533. SLIME FILTER. Clement H. Pead, Boksburg, South African Republic. In combination, the closed vessel having a filter at its upper end, a slime-pump and a distributor arranged to discharge the slimes and water upon the filter, the distributor being located at the top of the closed vessel.

624,552. COMPOSITION FOR CARBONS FOR ELECTRIC LAMPS. Anton O. Simmonier, Vienna, Austria-Hungary. Assignor of eleven-twentieths to Emil Frischauer, same place. The composition consists of ground carbon, ground quartz, diamond-dust, an aqueous solution of a soluble copper salt, and jellied silicic acid.

624,563. PROCESS OF MAKING ARTIFICIAL STONE. Charles W. Stevens, Harvey, Ill. The process consists in molding the stone compound while in a plastic or semi-liquid state or on a mold formed of relatively dry sand and then allowing the mass to set until the sand absorbs the surplus moisture from the compound, thereby converting the latter to a solid or non-liquid form.

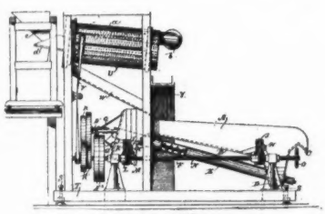
624,589. CRUSHER PLATE. Henry J. Wessinger, Tower, Minn. In combination with the recessed jaw of a stone-crusher, the sectional plate

624,589.

fitted thereto, and the means carried by the jaw and adapted to interlock with any one of the sections, whereby the same may be interchanged as desired.

624,605. ALLOY. William D. Allen, Huntsville, Ala. A metallic compound or alloy consisting of aluminum, platinum and iridium.

624,612. COMBINED GRAVITY SEPARATOR AND CONVEYOR. Thomas J. Barbour, San Francisco, Cal. An apparatus comprising a receptacle having an elongated inclined bottom and vertical sides, a feed-opening at the upper end and a discharge at the top of the lower end, a chamber extending vertically below the bottom proximate to the discharge and in which the lower end of the inclined bottom terminates to receive heavier material therefrom, means for supplying water to the receptacle whereby the lighter material



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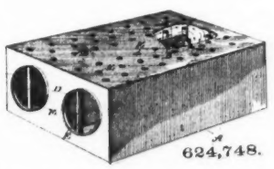


624,748.

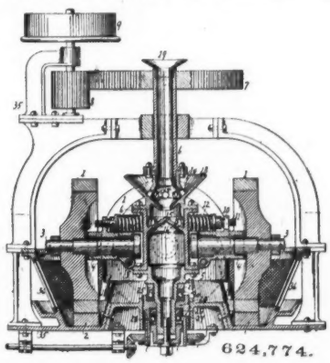
overflows therewith at the discharge, a screw conveyor and an inclosing casing therefor exterior to the receptacle, the conveyor having its receiving end entering the chamber at a point above its bottom whereby material of intermediate specific gravity is conveyed out of the chamber and discharged at the opposite end of the conveyor.

624,629. PEAT FUEL. Archibald A. Dickson, Toronto, Canada. As a new article of manufacture, a hard dense fuel-block consisting of peat containing approximately only the atmospheric degree of moisture, and embodying all of the fibrous, carbonaceous, volatile and other elements inherent of the raw material intact and unimpaired.

624,709. METHOD OF PRODUCING PLASTER PRODUCTS. Franklin P. Van Hook, Normal, Ill. The method consists in first submitting suitable material to the operation of calcining until reduced to a finely-subdivided or pulverulent condition, then immediately subjecting the material to the influence of a current of cold air in rapid motion and of such strength that the particles are taken up and carried in suspension separately and individually, and rapidly cooled.

624,748. HOT BLAST BOX. Sidney E. Bretherton, Silver City, N. Mex. Consisting of a horizontal metal casing, having a vertical longitudinal partition in the same and provided with an inlet and outlet opening located in the casing on opposite sides of the partition at its end which is joined to the casing, and a series of vertical tubes extending from top to bottom of the box and opening into the space above and below the box to form passageways and radiating tubes for hot ascending currents.

624,774. CRUSHING OR GRINDING MILL. Robert Ellin, Yonkers, N. Y. The combination with a pan and grinding-wheels, of a centrally-

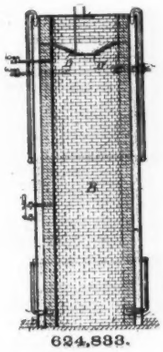


624,774.

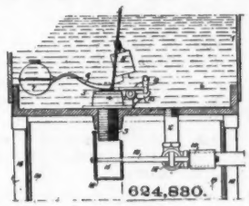
arranged hollow shaft provided with a feed-hopper and having a plurality of perforations formed at a point beneath the hopper, a conical distributor arranged in the hollow shaft, the base of the conical distributor extending entirely to the inner wall of the hollow shaft at a point immediately below the perforations therein, and a plurality of feed-chutes leading from the perforations and terminating between the grinding-wheels.

624,810, 624,811. HOISTING APPARATUS. Charles W. Hunt, William F. Hunt and Charles C. King, New York, N. Y. Assignors to the C. W. Hunt Company, same place. The combination with two drums and mechanism for moving the same, ropes passing from the drums, an elevated track and truck thereon and sheaves on the truck over which the ropes pass to the weight to be raised, of a third rope, sheaves upon the truck over which the third rope hangs as a loop and a sheave within the loop and connected to the article to be raised, and a drum by which this third rope is drawn up or allowed to pass off, and mechanism for actuating the respective drums.

624,830. HYDRAULIC AIR COMPRESSOR. John Liming, Philadelphia, Pa. The combination of the tank, its discharge-valve and float-valve lever, the latter having an upwardly-projecting arm with weight



624,883.



624,880.

624,888.

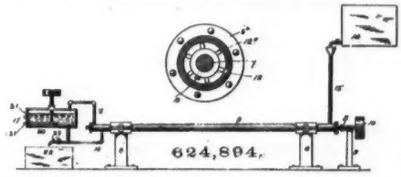
thereon, the arm being so disposed that when the valve is closed the power of the weight will be exerted to keep it closed, and when the valve is raised the power of the weight will be exerted to keep it raised.

624,833. PROCESS OF ROASTING ORES. Emil E. Lingwitz, Pueblo, Colo. In the roasting of sulphide ores, the method of stirring the ores consists in effecting the roasting under superatmospheric pressure and suddenly removing the external pressure on the ore while the blast is temporarily shut off, whereby the compressed gases within the ore mass break it open.

624,868. PROCESS OF AND APPARATUS FOR MAKING LINED TUBING. James Rowe, Chicago, Ill. The process consists in inserting a mandrel within a tube, mounting the tube and mandrel concentrically in an outer tube so as to leave an annular space between the tubes, introducing a filling into the annular space under pressure and allowing same to harden, and subsequently removing the mandrel from the inner tube, the inner tube remaining as the lining of the tubing.

624,883. MINING HAMMER. Frederick R. Waters, Ouray, Colo. A miner's hammer having its head provided with a transverse groove extending across its outer side, the same being central or equidistant from its ends, which are similar in form and size.

624,894. AMALGAMATOR. Willard M. Fuller, Colorado Springs, Colo. Assignor of two-thirds to Henry W. Hallett, same place, and Henry A. Laughlin, Pittsburg, Pa. In combination, a horizontal pipe, a rotary shaft therein having agitating projections extending there-



624,894.

from with free spaces between to permit the pulp to exert a pressure freely longitudinally of the pipe and between the projections of the shaft, an elevated pulp-tank elevated at a suitable distance above the horizontal shaft to produce a hydrostatic pressure therein, a pipe connecting the same with one end of the amalgamating-pipe and an elevated receptacle for the displaced mercury having a pipe connection between the same and the end of the horizontal pipe opposite to that with which the feed-pipe for the pulp connects.

GREAT BRITAIN.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy:

Week Ending April 22d, 1899.

7,411 of 1898. OPEN HEARTH FURNACE CHARGER. H. Tompkins, C. J. Bagley, L. Roberts and the Moor Iron and Steel Co., Stockton-on-Tees. Means for mechanically charging open hearth furnaces.

9,664 of 1898. AMALGAMATOR. L. Bloume, Paris, France. A system of amalgamating gold ores by mechanically forcing the pulp through mercury so as to get full contact.

13,800 of 1898. QUICKSILVER PREPARATION. A. Von Heyden, Dresden, Germany. Preparation of mercury as a black powder soluble or suspensible in water.

26,877 of 1898. TIN RECOVERY. J. C. Taliaferro, Baltimore, U. S. A. Method of recovering tin from tin dross.

3,062 of 1899. IRON SMELTING. O. Theil, Koiserslautern, Austria. Reduction of iron from ores by the blast furnace method, but on a furnace like an open hearth steel furnace.

Week Ending April 29th, 1899.

8,378 of 1898. STEEL TEMPERING. G. Behr and T. Wallfisch, Magdeburg, Germany. Method of hardening and tempering steel, a modification of the ordinary oil method.

-0,742 of 1898. SLIMES TREATMENT. G. F. Wynne and J. S. Borlase, Wrexham. Modifications in circular revolving slime-washing tables.

10,917 of 1898. IRON ORE BRIQUETTES. W. Thomlinson, Seaton Carew. Forming flue dust of iron ore or pyrites into briquettes for resmelting.

12,651 of 1898. DEPHOSPHORIZING IRON. J. Gordon, Rio de Janeiro, Brazil. Method of dephosphorizing iron and steel by means of cerium and other rare earths.

PERSONAL.

Mr. E. Vivian Bond, of New York City, is on an 8-months' visit to Europe.

Mr. Milton Moss, of Denver, Colo., was in Chicago recently on mining business.

Mr. I. L. Merrill, formerly of New Mexico, is now operating zinc mines at Joplin, Mo.

Mr. W. E. Sanders is now general manager of the Norton-Bothwell mines of Joplin, Mo.

Prof. C. O. Lagerfelt, of El Paso, Tex., is examining mines in New Mexico and Arizona.

Mr. S. W. Tyler, of Denver, Colo., is at present engaged in professional business in Montana.

Dr. Rossiter W. Raymond has resigned as president of the Chrysolite Mining Company of Leadville, Colo.

Mr. J. S. Hickey has been appointed general superintendent of the Anaconda Reduction Works, Anaconda, Mont.

Mr. A. R. Ledoux of New York City has recently examined the copper mines about Ely and Strafford, Vermont.

Mr. Victor C. Heikes, special agent of the Department of Mines and Metallurgy to the Paris Exposition, is in Utah.

Mr. Mathew Penhale has returned to Black Lake, P. Q., Canada, from New York City, to open asbestos mines at Black Lake.

Mr. James W. Neill has been in Butte, Mont., for 10 days on legal expert work. He will return to Salt Lake City the coming week.

Mr. A. N. Graeter, of Dillon, Mont., has gone to Bannack, where he is interested in a dredge that has started again for the season's work.

Mr. Walter J. Pentland, of Prescott, Ariz., is to have charge of the cyanide plant of the Compania Beneficiadora de Conchenyo, at Conchenyo, Mexico.

Mr. W. B. Devereux has gone to Alaska on the special excursion fitted out by Mr. Harriman of New York City and will not return till some time in July.

Mr. H. B. C. Nitze of Baltimore, Md., is in Porto Rico examining some deposits of magnetic iron ore said to exist in the southern part of that island.

Mr. Robert Billings has been appointed representative of Fraser & Chalmers, of Chicago, at Denver, Colo., and has opened an office in the Windsor Hotel.

Mr. Samuel James, late superintendent of the Pennsylvania Smelter, Sandy, Utah, is to take charge of the furnaces of the Globe Smelter, Denver, June 1st.

Mr. W. A. Jeffrey, formerly of Joplin, Mo., is now superintendent for an English company of a gold and silver mine in Old Mexico, 300 miles west of Chihuahua.

Mr. Stillman W. Wheelock, who for 5 years was Western representative of Park Brothers, Limited, is now manager of the Denver office of the Illinois Steel Company.

Mr. Jos. M. Searle, lately superintendent of the mines of the American Coal Company, in Walker County, Ala., is now in charge of the charcoal furnace at Rusk, Tex.

Mr. Frank N. Gibbs, of New York City, has gone to the Rainy Lake District, Ont., on professional business. He expects to stay in the Ontario gold fields several months.

Mr. R. M. Edwards, for years chief mining engineer of the Bigelow group of mines, has assumed full charge of the operations at the Isle Royale Mine, near Houghton, Mich., with the title of assistant superintendent.

Mr. W. J. Uren has been appointed assistant superintendent of the Fay Group of copper mines in Upper Michigan. This group embraces properties extending from the Washington, in Keweenaw County, to the Elm River.

Mr. Samuel Newhouse was in Denver a week ago. It is said he is to take hold of a large Leadville mining proposition, though it is probable that his numerous Utah undertakings will receive his chief attention this season.

Mr. Frank R. Field, Western representative of the Jeffrey Manufacturing Company, of Columbus, O., is making a trip through the mining camps of the Northwest, on which he will stop at Salt Lake, Spokane, Seattle and Boise City.

Mr. Courtenay De Kalb, mining engineer, of New York City, has gone to Mexico in the interest of the Compania Beneficiadora del Conchenyo, for which company he is consulting engineer. His address will be Conchenyo, Chihuahua, Mexico.

Dr. Malvern W. Iles has resigned his position as chief metallurgist of the Globe Smelting and Refining Works, at Denver, Colo., after long service in that capacity. He purposes devoting some time to rest and study, and will soon start for a trip to Europe.

Mr. George L. Lewis will sail from New York on May 24th on his way to Russia. He goes to that country for the purpose of erecting and putting in operation a large dredge built for the Russian Government by the Marion Steam Shovel Company, of Marion, Ohio.

Mr. Donald Gillis, the superintendent, and Mr. Joseph Bryant, the foreman of the Parrot mines at Butte, Mont., resigned recently. Mr. Gillis' position will be filled by Mr. James Lynch, a former foreman of the Anaconda, who will act in the same capacity at the Parrot.

Mr. Frank G. Bolles, who for some time past has been connected with the advertising department of the Westinghouse Companies of Pittsburg, has been appointed manager of the advertising department of the Bullock Electric Manufacturing Company of Cincinnati.

Mr. P. A. Reaves, of Kingston, Pa., superintendent of mining machinery of the Delaware, Lackawanna & Western Coal Company, at the Pettebone, Woodward and Avondale colleries, has resigned. Mr. Reaves has been with the company for the past 17 years and is 70 years old.

Mr. F. L Bosqui has resigned his position with the Standard Consolidated Mining Company, at Bodie, Cal., and has accepted one with the Melones Gold Mining Company, at Robinson's Calaveras County, Cal. This company purposes erecting large cyanide works in connection with its new 120-stamp mill.

Mr. Franklin Suiterman, of the Omaha Smelting Company's plant, at Durango, has been appointed manager of the Pueblo Smelting and Refining Company's plant, at Pueblo. Mr. Suiterman will succeed Mr. W. W. Allen, who resigned to accept a position with M. Guggenheim & Sons' Smelting Company, of New York.

Dr. L. D Godshall, superintendent since 1894 of the Puget Sound Reduction Company, at Everett, Wash., has severed his relations with that company and accepted a temporary position with the Hall Mines, Limited, of Nelson, B. C., during the absence of the regular superintendent, Mr. Robt. Hedley, now on his way to Europe.

Mr. Victor M. Clement has left Salt Lake City eastward bound, and sails from New York for England May 31st, on the St. Paul. For the past half year and more he has been at the head of Capt. J. R. De La Mar's extensive operations, and while he has not severed his connection with that remarkably successful mine owner, he states it is uncertain when he will return to America.

OBITUARY.

Markley Farish of San Francisco, Cal., was instantly killed in the shaft of the Dutch Mine, near Jimtown, Cal., on May 6th. He was but 22 years old and a graduate of the University of California last year. He was a nephew of John B. Farish of Denver, Colo.

Col. E. W. Cole, of Nashville, Tenn., died suddenly in New York city, May 24th. Colonel Cole was 65 years old, and a native of Tennessee, in which State he had been identified for 21 years with the coal, iron and railroad business. He began his career as a bookkeeper for the Nashville Chattanooga & St. Louis Railroad, and worked his way to general manager, and later president. He was president of the East Tennessee, Virginia & Georgia Railroad before it was merged into the Southern Railway System. In 1883 he incorporated the American National Bank, which proved very successful. He was the largest real estate owner in Nashville. Colonel Cole was interested in three of the largest blast furnaces of the South, at Sheffield, Tenn,, and was a stockholder in the Tennessee Coal, Iron and Railroad Company.

SOCIETIES AND TECHNICAL SCHOOLS.

Society of Chemical Industrial—New York Section.—At the meeting on May 19th, the following papers were read: J. H. Eastwick, "The Philadelphia Water Supply;" F. W. Traphagen and W. M. Cobleigh, "Additional Notes on the Cyanide Treatment of Slimes;" Clifford Richardson, an exhibition of lantern slides illustrative of the occurrence and application of asphalt; C. Glaser, "Double Salts of Nicotine Hydrochloride and Cadmium Chloride;" R. W. Moore, "On the Analysis of Lupuline," "On the Analysis of Assafoetida."

Engineers' Club of St. Louis.—At the meeting on May 17th, 23 members were present. E. S. Pillsbury, S. B. Way, C. N. McFarland and F. C. Faust were elected members of the club. The committee appointed to draw up resolutions on the death of Winthrop Bartlett made its report, which was accepted. The resignation of Mr. Richard McCulloch, as a member of the Board of Managers of the Association of Engineering Societies, was read and accepted.

Prof. F. E. Nipher gave a talk on the elongation of steel bars as a function of the temperature and stress. Prof. Nipher gave the equation, showing the relation of the several quantities, and discussed the equation, showing graphically the way in which the quantities varied.

INDUSTRIAL NOTES

The Snow Steam Pump Company, of Buffalo, N. Y., has increased the wages of its 400 employees from 5 to 10%.

The Carnegie Steel Company has placed an order with the Lloyd Booth Company, of Youngstown, O., for a new slabbing mill.

Messrs. W. B. Devereux and A. R. Ledoux of New York City recently incorporated the Zinc Lead Separation Company, to take over and apply in this country certain processes they have been investigating for some time.

The Truax Ore Car Manufacturing Company, of Denver, Colo, has received 45,000 lbs. sheet steel, cut to order, from Pennsylvania, to be used in the manufacture of its ore cars. It reports a large demand for cars.

The Edward P. Allis Company, of Milwaukee, Wis., recently secured a contract to supply the machinery to double the capacity of the Le Roi Smelter, at Northport, Wash. This will give that plant a daily capacity of 800 tons.

The Diamond State Steel Company, which recently absorbed the Diamond State Iron Company, has effected partial organization as follows: President, Howard T. Wallace; treasurer, W. H. Jenks, Jr., of Philadelphia; secretary, W. H. Wallace.

Westinghouse, Church, Kerr & Company, through their New York office, have sold to the United Railways and Electric Company of Baltimore an entire equipment of Roney stokers for the new power plant which that company is constructing.

The Wheeler Condenser and Engineering Company has been awarded the contract for the condensing plant to be used by the Belfast, Ireland, Electric Power Company. The Babcock & Wilcox Company has the order for pipe work for the same undertaking.

The Jeanesville Iron Works of Jeanesville, Pa., has shipped through its Denver branch a sinker to Webb City, Mo., a No. 5 sinker to Empire, Colo., and a mine station pump to Independence, Colo. The firm carries a large supply of pumps in stock at Denver.

Messrs. Smith & Thompson, the assayers' scale manufacturers, of Denver, have lately made considerable improvements to their workrooms in consequence of their increasing business and have added a large salesroom, where their different scales can be seen to good advantage.

The Gillette-Herzog Manufacturing Company, of Minneapolis, Minn., has secured the contract for the new annex to the leaching department of the De La Mar Mercur Mill, at Mercur, Utah. This includes 4 steel tanks 50 by 25 ft. and 5 ft. high, with the inclosing steel building.

H. K. Porter & Company, of Pittsburg, Pa., recently shipped 4 compound locomotives to Russia, 2 to Finland and 2 double-end engines to a South African mining company. This summer the firm expects to sell a number of plantation engines, principally narrow gauge, in Cuba and other West Indies islands.

The Dean Brothers Steam Pump Works of Indianapolis, Ind., recently installed an additional multiple drilling machine, a radial tapping machine and an automatic turning lathe. The firm has shipped a pair of pumping engines for the water-works at Sydney, Australia. The shops are running 13 hours daily.

The Electrolytic Chemical Company has recently been incorporated with a capital of $5,000,000, under South Dakota laws, to work the electrolytic chemical process of Prof. I. T. Roberts, of the University of Illinois. This company intends to make caustic soda, bleaching powder, hydrochloric acid and chlorine.

The property of the Globe Phosphate Company, at Columbia, S. C., is now owned by the Virginia-Carolina Chemical Company. The price was $50,000. It is stated that the Virginia-Carolina Chemical Company will erect a plant of double the capacity of the old mill, will put in new machinery and generally enlarge its business.

The American Impulse Water Wheel Company, of New York City, states that it has received word that the 36-in. water wheel of its make lately set up in the Boston Institute of Technology has on the first test, before bear-

ings are smooth, etc., shown over 80% efficiency, and that the whole water engine in design and finish is highly satisfactory.

The Denver Engineering Works, of Denver, Colo., states that it has improved its high-speed engine by substituting a piston valve for the old form of flat gridiron valve. A large number of orders for electric hoists from British Columbia to Mexico are now being filled and thus far it has been unable to supply the demand for the new Cammet concentrator.

The St. Louis Steam Engine Company of St. Louis, Mo., recently shipped several engines to California, 2 of their largest double-belted compressors to Milwaukee, direct-connected air compressor to Leadville, Colo., and engines to different points in Texas. The company has nearly completed 2 of its largest double-steeple compressors to go to the Jonesboro Water Company, Jonesboro, Ark., for deep well pumping.

The firm of H. K. Porter & Company, of Pittsburg, Pa., now the H. K. Porter Company, announces that it will continue the manufacture of light locomotives. The officers are as follows: H. K. Porter, president; W. E. Lincoln, vice-president; W. E. Martin, treasurer; C. L. McHenry, secretary; E. P. Lord, general manager and superintendent; D. E. Ferguson, purchasing agent.

The Warwick Iron Company, of Pottstown, Pa., has agreed to sell its plant to the Warwick Iron and Steel Company, with a capital stock of $1,500,000. Mr. Cook will continue as president and manager. The Warwick furnace has been in operation for 25 years. Jacob Fegely, the treasurer, and Edgar S. Cook, president and manager, were large holders of stock in the old company.

The Buffalo Forge Company, Buffalo, N. Y., recently shipped 2 large induced draft fans to the Companie Metalurgica Mexicana, at San Luis Potosi, Mexico, the largest, if not the first, ever used in Mexico. The last important order for a similar plant calls for 2 fans of very nearly the same size, but having direct attached double upright double acting inclosed engines of the United States Navy type. This outfit is to be shipped to Johannesburg, South Africa.

The American Cream Tartar Company has been incorporated to refine cream tartar and bicarb. soda. Capital, $175,000, all subscribed. Incorporated by C. de Guigne, president; Daniel Meyer, vice-president; George F. Volkmann, second vice-president; August Schilling and John H. Wheeler, directors, and besides by G. de Latour and John Stauffer. This company absorbs the cream of tartar factory at Philadelphia operated by the Stauffer Chemical Company.

Profits recently reported by prominent German chemical works are as follows: Chateau-Salins Soda Fabrik Company, profit 397,541m.; dividend, 5% ;Elberfeld Carbonic-Acid Works, balance, 23,315m.; Gerusheim Chemical Factory, a loss of 13,823m. for 1898; Heufeld Chemical Factory, profit for 1898, 166,696m.; dividend, 6%; Leopoldshall Ascania Factory, profit, 31,246m.; Oranienburg Chemical Factory, profit, 155,447m.; the Berdingen Chemical Factory, Weilerter-Meer, a dividend of 14%.

The American Alkali Company, recently incorporated to employ the "Rhodin" process for the electrolytic manufacture of heavy chemicals, is now engaged in importing the necessary apparatus from Manchester, Eng. Of the 600,000 share capital the Commercial Development Company of Great Britain, from whom the patent rights to the process have been purchased, will receive 240,000 shares. The suits between the Commercial Development Company and the Castner Kellner Company in England, over an alleged infringement by the Rhodin apparatus on the Castner-Kellner patents, are still unsettled.

The J. H. Montgomery Machinery Company, of Denver, Colo., has recently shipped common sense whims to Kamloops, B. C., Sierra Mojada, Mex., Roxbury, N. C., Virgilina, Va., Nogales, Ariz., and Hill City S. D., and a 10 H. P. steam hoisting plant to W. A. Welch, Turrett, Colo., besides a complete hoisting plant to James Main, Hornbrook, Cal., to be driven by a current wheel. The driving shaft is 14 in. square, and the hoist is designed to wind a ⅝-in. double line cable 280 ft. per minute, and with a maximum load of 6,000 lbs. The current wheel is 20 ft. in diameter. The plant will be used by the American Bar Mining Company in Siskiyou County, Cal.

The circular sent the stockholders of the Bethlehem Iron Company regarding the lease of the property to the Bethlehem Steel Company, states that the Iron Company is to receive 6% on its $7,500,000 of capital stock, and is to be relieved from further payments on account of its indebtedness. The circular adds: The expansion of the business will require from time to time expenditures for machinery and the general enlargement of facilities. Your directors are of the opinion that the funds required for these expenditures and for the liquidation of the bonded debt should not be provided out of earnings. It is therefore determined that the new corporation shall have $15,000,000 capital, divided into 300,000 shares of a par value of $50 each.

The F. M. Davis Iron Works Company, of Denver, Colo., will shortly begin erecting a new building across Larimer Street from its present works which will be used as a boiler shop. The building will be 132 x 200 ft. of brick and steel construction and will have five 5-ton traveling cranes and 1 large electric crane with 60 ft. span and a capacity of 25 tons. Construction will begin as soon as the contract for the new Woods chlorination mill for the Gold Coin Mine, at Victor, is completed. This mill will have seven 50-ton Argall roasters, and 7 chlorination barrels, each 7 ft. in diameter and 17 ft. long. The Davis Company now employs 300 men.

The plant of the Pennsylvania Tube Works, on Second avenue, Pittsburg, Pa., will, it is said, be the first tube mill in the world to be equipped with electric power. The installation will consist of boilers to generate 1,500 H. P., three 550 cross compound engines, three 400- K. W. direct connected 3-phase alternating current generators, boiler feed pumps and central condensers. The steam engines used in the pipe mills will be replaced by about 20 independent 3-phase induction motors ranging from 200 to 25 H. P. to drive the machinery. A 110-K. W. rotary converter to transform the alternating current to a straight current, will operate cranes which are now rope driven, and also supply power for the arc lights.

The managers of the plants of the American Smelting and Refining Company are: National, Chicago, Ill., M. F. Holmes, manager; Omaha, Omaha, Neb., W. T. Page, manager; Argentine, Argentine, Kan., A. R. Meyer, manager; Globe, Denver, Colo., D. Sheedy, manager; Grant, Denver, J. B. Grant, manager; Eilers, Pueblo, Colo., A. Eilers, manager; Arkansas Valley, Leadville, J. H. Weddle, manager; Bimetallic, Leadville, Franklin Ballou, manager; El Paso, El Paso, Tex., H. R. Simpson, manager; Germania and Mingo, Salt Lake City, T. R. Jones, manager; East Helena, East Helena, Mont., C. W. Whitney, manager; Great Falls, Great Falls, Mont., F. M. Smith, manager.

The Hercules Gas Engine Works (Incorporated), of San Francisco, has orders for the following engines, which are under construction at its shops: John Stock Sons, San Jose, Cal., two 20-H. P. engines; Western Iron Works, Los Angeles, Cal., two 30-H. P.; one 35-H. P.; one 10-H. P.; one 15-H. P.; two 6-H. P. Crocker-Sperry Company, Santa Barbara, Cal., one 35-H. P. engine, all of them for irrigating purposes; E. C. Taliant, Santa Barbara, Cal., one 6-H. P. engine; one 1-H. P. engine; M. Diggs, Woodland, Cal., one 25-H. P. portable engine; Thos. Crowley, San Francisco, one 3-cylinder, 25-H. P. marine engine; Henry Peterson, San Francisco, one 40-H. P. marine engine; Morgan Oyster Company, San Francisco., one 40-H. P. marine engine; Joseph Wainwright, Sonora, Cal., one 10-H. P. hoisting; Minnesota Silver Company, Sandon, B. C., one 6-H. P. hoist; Manter & Larson, Porterville, Cal., one 7-H. P. hoist. The company is also building a pumping and hoisting plant for the Young American Gold Mining Company, Salt Lake, Utah, consisting of: One 37½-H. P. pumping engine to drive an 8-in. by 5-ft. Cornish pump; one 25-H. P. hoist; Dwight Furness & Company, Guanaguato, Mex., one 8-H. P. stationary engine; John Danks & Son, Melbourne, Australia, two "Special" engines; one 8-H. P. engine; James Martin & Company, Sydney, Australia, one 10-H. P. stationary engine; E. Porter & Company, Auckland, New Zealand, three "special" engines; one 25-H. P. marine engine; Lane & Brown, New Zealand, shipbuilders, one 50-H. P. marine engine.

The American Agricultural Chemical Company has been formed with $40,000,000 capital, divided into $20,000,000 cumulative preferred 6% stock and $20,000,000 common stock, to include the following fertilizer plants: Alexander Fertilizer and Chemical Company, Alexandria, Va.; H. J. Baker & Brother, Brooklyn, N. Y.; Bradley Fertilizer Company, Boston, Mass., and Los Angeles, Cal.; Chemical Company, of Canton, Baltimore, Md.; the Cleveland Dryer Company, Cleveland, O.; Cumberland Bone Phosphate Company, Boothbay Harbor, Me.; Crocker Fertilizer Company, Buffalo, N. Y.; Detrick Fertilizer and Chemical Company, Baltimore, Md.; Jarecki Chemical Company, Sandusky, O.; Lazaretto Guano Company, Baltimore, Md.; Liebig Manufacturing Company, Carteret, N. J., and Wilmington, Del.; Lister's Agricultural Chemical Works, Newark, N. J.; Maryland Fertilizing and Manufacturing Company, Baltimore, Md.; Michigan Carbon Works, Detroit, Mich.; Milsom Rendering and Fertilizer Company, Buffalo, N. Y.; Northwestern Fertilizing Company, Chicago, Ill.; Preston Fertilizer Company, Brooklyn, N. Y.; the Quinnipiac Company, Boston, Mass.! Read Fertilizer Company, Brooklyn, N. Y.; Tygert-Allen Fertilizer Company, Philadelphia, Pa.; Williams & Clark Fertilizer Company, Carteret, N. J.; Zell Guano Company, Baltimore, Md. Several of the constituent companies are also large producers of boneblack, sulphuric, muriatic and phosphoric acid, ammonia, compounds, sulphate of potash, sulphate of soda and animal oils. The total net assets of the subordinate companies is put at $13,164,287. John F. Gibbons, of New York, has been selected as president, and Robert S. Bradley, of Boston, and William H. Grafflin, of Baltimore, Md., have been selected as vice-presidents of the new company.

TRADE CATALOGUES.

"No. 25,000," a red-bound circular issued by the Ingersoll-Sergeant Drill Company, of New York City, gives some facts and figures about the company's rock drills.

Catalogues No. 225 and 226 sent out by the Westinghouse Electric and Manufacturing Comapny of Pittsburg, Pa., describe respectively fan motors for direct and alternating currents. Brief illustrated descriptions of the motors are given, with prices.

Elmer E. McIntyre, of Pittsburgh, Pa., issues a 16-page catalogue of his dry battery electric safety lamps for the use of miners, oil, gas and water-works employees and for workmen in powder mills or warehouses where explosives are stored. The outfit is stated to be very compact, consisting of a dry battery connected by a cord with a white enamel reflector that can be attached to the cap or any part of the clothing by a stick pin. It is furnished in 4 sizes, the size for general use weighing but 3 lbs. complete. Full directions for use and prices are given.

Hoisting engines in great variety are described in advance catalogue No. 2, sent out by the Trent Engineering and Machine Company, of Salt Lake City, Utah, that is agent for the Webster, Camp & Lane Machine Company, of Akron, O. The catalogue gives prices of light geared hoists for small mines and prospecting use, first motion double Corliss hoisting engines and high duty compound Corliss hoists for deep mining, besides improved electric hoisting engines from 8 to 100 H. P. A list of 22 large mining plants is given at which hoists have been installed, including the De La Mar mine at Mercur, Utah.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

(From Our Special Correspondent.)

Conventions of Western Miners.—On May 17th, at Salt Lake City, the 7th annual convention of the Western Federation of Miners adjourned sine die, having been in session 9 days. At the same place, and during the same period, the Western Labor Union, largely composed of miners, held its annual convention. President Boyce, of the Federation, and President McDonald, of the Union, were re-elected. Each organization has decided to hold the 1900 convention in Denver, and at the same time. The most important feature of the proceedings, as printed in the local papers, is the stand taken on the troubles in Idaho. In this respect both organizations appear to act as a unit, and vehemently approved resolutions following a fitting preamble, as follows: "Resolved, By the Western Labor Union, in convention assembled, that we condemn every public official responsible for the abrogation of civil law in Idaho, from President McKinley, through his Secretary of War, down to Governor Steunenberg and Coroner France; and be it further

"Resolved, That this convention call upon the organized labor of the American continent to enter its mighty protest and condemnation of such unwarranted tyranny and the effort now being made to reduce the standard of labor to the level of serfdom."

There is nothing to add to what has already been said in recent issues of the "Engineering and Mining Journal" in regard to the union miners of the Cœur d'Alene. So long as their chosen representatives take their present stand the more difficult will it be to have the mines or other resources of Idaho exploited. On May 16th President Samuel Gompers, of the American Federation of Labor, who, it would seem, went to Salt Lake City to confer with the leaders, addressed the delegates and others, and said the strikers at the Bunker Hill & Sullivan Mines were non-union men. He did not believe that

any member of the Miners' Union was guilty of the dastardly act by which property and life were destroyed; that it was a large stretch of military authority for any officer to declare an organization of innocent men guilty of infamous crime, and for General Merriam to call the Miners' Union a criminal organization was unwarranted. We are told the Miners' Union has the best interest of the people at heart, while it is the mailed hand of militarism that is undermining the country. Evidently things in Idaho will not improve much until this matter is settled, and it can be settled in but one way.

ALABAMA.

Clay County.

Ivey.—This mine and mill, of which R. L. Ivey is superintendent and chief owner, are 7 miles from Ashland. The ore comes mostly from near the surface. It is pulverized by a Gates crusher and Cornish rolls. The pulp is mixed with mercury in a stiner made from a Huntington Mill, and fed to 4 sets of silvered copper plates. At present 40 to 50 tons of ore are treated daily.

ARIZONA.

Cochise County.

(From Our Special Correspondent.)

Copper Queen.—The smelter's capacity at Bisbee is about to be increased from 600 to 800 tons daily, and several improvements are planned, including a new furnace, a complete system of matte receivers and slag settlers; hydraulic pressure system, including accumulators, pressure pumps, etc. George O. Bradley, the Salt Lake City representative of the Gates Iron Works, was here recently with the drawings, which were approved by President Douglas and Manager Williams. It is learned from the Gates people that the plant will be ready for duty within 90 days. Of the mine there are no news items other than favorable. Deepest working, 600 ft., where the ore is reported to run above 6%. The company has 1,500 men on the pay roll.

Yavapai County.

A disastrous fire, the third within 18 months, wiped out a large part of the town of Jerome on May 19th. Over 300 buildings were burnt, but no lives are reported lost.

Richenbar.—This mine, at Richenbar, 18 miles from Mayer, is reported under option to J. H. Darragh, of Trenton, N. J., who, it is said, intends to erect a 20-stamp mill with vanners on the Agua Fria, which traverses the property. Mr. Darragh, according to reports, also intends to erect a large smelter at Mayer to treat copper, gold and silver ores from the Big Bug District. Abram S. Hewitt, of New York, is said to be interested in the enterprise.

ARKANSAS.

Pulaski County.

Bauxite Lands.—Levi Storth, of Little Rock, has sold to the Pittsburg Reduction Company, Pittsburg, Pa., manufacturers of aluminum, about 900 acres of bauxite lands, in fee or under lease. The lands are mostly in the vicinity of Maplevale.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Centennial.—This mine, near Drytown, will start up again very soon. Robt. Read is superintendent.

Calaveras County.

Gwin.—The mine has declared its fifth dividend, making a total to date of $61,500. The stockholders have elected the following directors and officers for the ensuing year; F. F. Thomas, president; C. S. Benedict, vice-president; J. J. Crawford, secretary. Directors, E. C. Voorheis, C. M. Belshaw, David McClure and Dion C. Hyland.

El Dorado County.

(From Our Special Correspondent.)

Idlewild.—The cyanide plant at this mine, 3 miles east of Greenwood, has started up under the management of H. S. Chapman. There is a large quantity of tailings on the dump.

Madera County.

(From Our Special Correspondent.)

Ne Plus Ultra.—Arrangements are being made to erect a large smelter at this copper mine to handle the mine ore, and do custom work. About 125 men will be employed. The mine is on Dalton's Ranch. About 10,000 tons of ore are said to be on the dump.

Nevada County.

(From Our Special Correspondent.)

Gold Flat.—This property, near Nevada City, is reported bonded to an Eastern syndicate that intends to pump out the mine, increase the milling capacity, put in an air compressor and other machinery. J. H. English will be superintendent.

Live Oak & Minuet.—At this mine, on Grizzly Ridge, 2½ miles north of Columbia, the 20-stamp mill purchased from the Palo Alto Mining Company, of Butte County, will be set up at once, and the stamps will be dropping in about 30 days.

Metropolitan.—This mine, 1 mile north of Moore's Flat, has been bonded by southern California men, who intend to develop the property on a large scale. The old developments consist of 3 tunnels, about 1,400 ft. long. Water power is free. The ledge carries low grade ore with occasionally rich pockets.

Reddick.—At this mine, near Nevada City, a new shaft is being sunk directly over the old one. A large influx of water recently caused a great deal of trouble.

Riverside County.

(From Our Special Correspondent.)

O. K.—The development work at this mine, about 50 miles northeast of Walter's Station, continues. One of the owners recently brought out a gold brick weighing 168 oz. fine gold, the result of a run of the 2-stamp mill and the 10-ton cyanide plant. The dry placers in the neighborhood are said to pay from $8 to $10 per man per day.

Shasta County.

(From Our Special Correspondent.)

Globe.—Some very rich ore has been uncovered at this mine, near Copper City, 22 miles east of Redding. The lowest assays are said to be $40 per ton. The rock carries copper and free gold.

Mt. Shasta Gold Mines, Limited.—At a regular meeting of the directors, May 15th, the company declared a first dividend of $6,000. The mines are 13, or about 250 acres of land. The capital stock of the company is 100,000 shares, of a par value of $5 each. The mine is working from 65 to 80 men, and shipping its ore to the Keswick Smelter. The ore has averaged $40 per ton to a depth of 300 ft. Stoping is being carried on on the 200-ft. level, and a station has been cut on the 300-ft. level from which drifts are being run. The management states the mine has earned $26,000 since the present owners took hold in July, 1898, while $20,000 has been spent in equipment and development, and in paying off the balance of the purchase price. The mine is free from debt. The officers of the company are: O. O. Howard, Jr., president and treasurer; F. E. Ware, vice-president and general manager; and H. A. Ladd, secretary. Messrs. Howard and Ware own nearly all of the stock of the company. The offices are in San Francisco.

Sierra County.

(From Our Special Correspondent.)

Gold Bluff.—The ditch at this mine, 2 miles northeast of Downieville, has been cleaned out and enlarged. The mill has started up again.

Triple Pocket.—The mill in Slug Canyon crushing day and night. The water supply is ample.

Siskiyou County.

Preston Peak Copper Company.—This New York City company with $2,500,000 capital in $5 shares, proposes to develop a claim 28 miles east of Crescent City and 20 miles from Waldo. The main lode is stated to be about 15 ft. wide, and ore is said to assay 10% copper and $2.41 gold per ton. The country rock is granite and chlorite schist. The ore is chalcopyrite and there are no carbonate ores, the covering being an iron cap. But very little work has been done on the claims. The directors are Chas. A. Lieb, Henry Mathey, F. M. Laude and D. J. Newland, of New York City; O. T. Crosby, F. C. Stevens, of Washington, D. C. Mr. Lieb is president and treasurer, Mr. Mathey vice-president, and Mr. Newland secretary, while R. A. Parker, of San Francisco, Cal., is consulting engineer, and Henry Philips is superintendent at the mines.

(From Our Special Correspondent.)

Commodore.—At this mine, at the head of Barkhouse Creek, 13 miles northeast of Scott's Bar, a large force of men is employed both at the mill and mine. The average yield is good. The ore was formerly worked by an arrastra.

Mabel.—This mine, on the north side of Baldy Ridge, 7 miles northeast of Scott's Bar, has been bonded to an Eastern syndicate for $11,000. A mill is to be erected and work begun inside of 30 days. The same gentlemen have purchased other claims in the vicinity.

Salmon River Hydraulic Company.—A large force of men are working on this property on the North Fork of the Salmon River, 5 miles northeast of Sawyer's Bar. The water supply is good and will probably hold out until late in the season.

Trinity County.

(From Our Special Correspondent.)

Golden Jubilee.—At this mine, on Coffee Creek, the experimental cyanide plant will be replaced by a permanent plant of large capacity. A lot of high grade ore has been shipped to the Selby Smelting Works. J. C. Steel is superintendent.

Tuolumne County.

Trio.—The trustees of the Trio gold properties send notice to the holders of trustees' certificates, saying the trustees have developed this property so a large mill is to put the mine upon a dividend-paying basis. To work the Trio, Mooney, McCann and Clark claims, known as the Trio Group, leaving the Erin-Go-Bragh and Cloudman in the hands of the trustees, a company called the Harvard Gold Mining Company, of Tuolumne County, Cal., has been organiezd under the laws of Wyoming, with a capital of 200,000 shares at $5 each, or $1,000,000. The trustees of the Trio properties are: W. B. Buckminster, Edwin H. Mason, Charles C. Jackson and W. Cameron Forbes, of Boston.

(From Our Special Correspondent.)

Dutch.—The milling plant at this mine, at Quartz Mountain, will be increased to 40 stamps. The underground workings are looking as well as ever.

Free Lance.—A San Francisco syndicate has bonded this mine, on the Tuolumne River, near Ward's Ferry Bridge, for $6,000. The tunnel is in 130 ft., showing a 3-ft. vein said to average over $35 per ton in free gold. A second tunnel is to be run. P. R. Gardner is superintendent.

Mt. Jefferson.—A full force of men is employed at this mine, at Groveland. The shaft is down 310 ft. and drifts have been run on the 100 and 200-ft. levels, the pay streaks averaging over 6 ft. Drifting is also going on on the 300-ft. The management contemplates erecting a 20-stamp mill.

COLORADO.

Boulder County.

Venanago Mining and Reduction Company.—This company, which recently took the Delano mill at Boulder, is now operating the same to its capacity, and is at work on the Scotia, the Horsfal and the Logan.

Victoria.—At Summerville the new owners have installed an air compressor, and are sinking the shaft with air drills from its present depth of 400 ft. 100 or 200 ft. further. Work has been resumed on the Goldsmith Maid, which is near the Victoria.

Fremont County.

Mayflower.—This mine, one of the best about Bare Hills, has been purchased by the Seven Sisters Gold Mining Company for $75,000; also the White Mule, Yankee Girl, New Orleans, Pin Oak, Boston Oak and Miner's Dream, paying for the 6 latter the sum of $30,000. The claims comprise a group located on veins radiating from Specimen Hill. The Mayflower is the only one of the group having any considerable amount of development, its shaft and levels aggregating 475 ft., and opening a strong quartz vein that averages $25 per ton in gold, silver and copper. The plant, a 55 H. P. hoist, with a sinking pump, will be increased by a 4-drill air compressor, already ordered. The force of men will be increased and operations pushed. W. S. Elkins, who is vice-president and superintendent of the company, is directing operations.

Gilpin County.

(From Our Special Correspondent.)

Mining Transfers.—D. Lawrence, of Denver, to E. N. Welch, of Boston, Mass., a 1-16 interest in the Surety Lode, in Independence District. A sheriff's deed has been issued to W. F. Robinson, of Denver, for Robert Lode, by reason of judgment against Roslyn Mining and Milling Company. Otto F. Meister, of Collinsville, Ill., has given a 3 years' lease on the Powers Lode claim in Russell District, to H. A. Hicks. Domenico Dipozzi has deeded to E. S. Blake a portion of mill site survey No. 237 B. on North Clear Creek, at Black Hawk. A. T. Zuneau to Stanley & Irish, a ⅓ interest in the Ruby placer claim, in Central District.

Moyle.—The Great North Downs Mining Company is sinking the shaft, and is down over 100 ft., opening up a very nice crevice. Shaft will be sunk 200 ft. at once. Massachusetts capital is interested, and J. V. Thompson is manager.

New York Mill.—It is reported that the company intends putting in 50 rapid-drop stamps in place of the slow-drop. The mill is being connected with the Gilpin Tramway Company's lines, and it will more than double its capacity if the change is made. Frank C. Came is manager.

Running Lode.—The property is worked by the Gowers Mines Syndicate, Limited, an English corporation, with F. G. White in charge, at Central City. About 20 men are working on the tribute system and steady shipments of both mill and smelting ore are made. The property needs depth.

Saratoga.—The main shaft is to be sunk from 900 to 1,000 ft. The working force is 40 men, and heavier shipments are reported. In the 900-ft. the ore body is from 6 to 7 ft. wide. E. Le Neve Foster is manager.

The Boston & Denver Mining and Milling Company.—This company has been incorporated with $250,000 capital, and Theophilus King, W. M. Brewster, Deleware King, all of Boston, and M. P. Dalton and C. K. Colvin, of Denver, are

directors. The company is to work the Gregory Bobtail property, at Black Hawk.

Topeka.—At the Randolph Mill office there are 3 pieces of free gold ore from this mine on exhibition. The heaviest piece weighs 75 lbs., and is worth $600. The ore is calcite, showing zinc, and is impregnated with free gold.

Washington Extension.—Messrs. Drake Brothers, the owners, are shipping smelting ore, running for first and second grades $70 and $47 per ton respectively, and the mill ore is good for 3 oz. gold per cord.

Western Italian Protectory Mining Company.—This company has been formed to operate the State of Maine Gold Mine, at Black Hawk, with a capital stock of $100,000, in $1 shares.

Grand County.

It is stated that Boston parties have taken an option on 2,200 acres of placer ground 60 miles from Steamboat Springs, and will equip the property with a hydraulic plant.

Lake County—Leadville.

(From Our Special Correspondent.)

A. Y. & Minnie.—Lessees Newton & Douglass after June 1st, besides handling 120 tons daily of low grade ore, will put on a night shift and ship 50 tons per day of the better grade to the smelters.

Denver City.—Lessees have just secured a lease on the south end of this property and will start operations June 1st.

Horseshoe District.—The heavy snows greatly set back early spring work. The Hilda Mining Company is to sink its shaft on the Last Chance to the lower contacts. This shaft is already down 400 ft. The Hill Top will resume shipments by June 1st.

Ibex Mining Company.—Shipments run from 200 to 300 tons per day. On May 20 Mr. S. W. Mudd assumed active management. Mr. Campion retains the general management.

Iron Silver Mining Company.—Operations are pushed through the Moyer shaft and 200 to 250 tons of low-grade ore are shipped daily. Some zinc ore is also to be shipped and a quantity of it is in the bins.

Lida Gold Mining Company.—This gold belt proposition has resumed small shipments, and by June 1st will be handling 50 tons per day. Tim Goodwin is manager for the owners, and also on the claims of the New Monarch Mining Company.

Mab Mining Company.—Continued development work shows a wonderful ore body, while new work goes on in virgin territory. Shipments are steady and the output for May will be about 5,000 tons of good grade ore.

ian shaft are working a very good iron ore that assays 20 to 25 oz. silver.

Orion.—This downtown new shaft, under the direction of C. H. Stead, has encountered a good contact at 420 ft., and development work will be begun.

Penrose.—The Snow sinking pumps are being removed and the compound pump is now handling the regular flow of 1,200 gals. per minute. Repairs in the workings will be completed soon.

Starr.—A rich strike has been made in this property, controlled and worked by the Home Mining Company. The ore is supposed to be the extension of the rich Welden shoot, and was caught at the 500-ft. level in a drift run 300 ft. from the shaft. The ore is a magnificent chloride and assays from 300 to 400 oz. silver. The find is 300 ft. from the Welden line, and thus has much stoping room.

Stone.—The lessees have caught a fine lead streak in a drift from the new shaft at 100 ft. The vein is 4 ft. wide and assays 40% lead. Shipments will begin soon.

Twin Lakes Section.—Arrangements are being made for a general start up by June 1st. Several new enterprises are to start, among them a resumption by the Fall River Mining Company on the old Anthony group. It is understood that the mill, destroyed by snowslides, will be rebuilt, larger and better equipped than the old one.

Yak Mining, Milling and Townsite Company.—This concern, headed by August R. Meyer, of the Consolidated Kansas City Smelting and Refining Company, is pushing work on its tunnel in Breece Hill and is now within 2,500 ft. of the Forest Queen, owned by the combination and situated squarely on the summit of Breece Hill.

Routt County.

(From Our Special Correspondent.)

At Columbine Camp the English syndicate, lessee of the Minnie D., has ceased work until its manager, who is now in England, returns.

Elkhorn.—One small carload of ore has been shipped from this mine, 11 miles from Columbine, by sub-lessee Johnson. Work is suspended during the breaking up of the snow roads.

H. P. Placer Mining Company.—The superintendent arrived about April 1st at Hahn's Peak with a considerable force of men. Owing to the unusually heavy snowfall the work of washing will begin nearly a month later than usual.

Tom Thumb.—Frank Martin, who owns the controlling interest in this claim, near the summit of Hahn's Peak, has been working with 1 man and has extracted during the winter 2 cars of fair grade lead-silver ore, 1 car of which has been shipped from Wolcott, Colo., while the other is in transit in small lots by stage to the nearest railway station, about 110 miles.

San Miguel County.

Smuggler-Union.—At a meeting of the directors of this mine, a controlling interest in which was recently acquired by Eastern parties, the following directors were elected: A. H. Fowler, Denver; J. B. Grant, Denver; B. B. Lawrence, Denver; T. L. Livermore, H. L. Higginson, R. L. Agassiz and Baulkeley Wells, of Boston. The officers are: B. B. Lawrence, president; Baulkeley Wells, secretary and treasurer.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

April Output.—The output for April amounted to 30,171 tons of ore of the total value of $1,109,079. Of this 7,674 tons of the value of $71 per ton, making $544,854, were sent to the smelters, and 22,497 tons of the value of $25 per ton were treated by the chemical mills. Only 1 local mill worked during the month. The tonnage of milling ore shows a decrease from March, but the May production will probably show quite an increase.

The principal dividends paid were: Portland, $60,000; Gold Coin, $10,000; Gold King, $30,000; Anchoria-Leland, $18,000; Vindicator, $25,000; making a total of $143,000. This list does not include those paid by close corporations or the profits of the mines owned by private individuals.

Cripple Creek District Electric Railway.—This road is again using the current from its plant, run by water power, near Lake Morraine, on the Manitou slope of Pike's Peak. The line is between 8 and 9 miles long.

Garfield Consolidated.—This company is at present producing from $12,000 to $13,000 worth of ore per month from the F. O. lease, which runs till August next, when the property will be worked by the company. The company is now receiving about $2,500 per month in royalties. It is understood that the property has produced about $182,000 worth of ore since the consolidation a little over a year ago. This property is on Bull Hill, near the Union company's property.

Independence Town and Mining Company.—The new steel gallows frame in the main working shaft is now in place, as well as the steel frame work for the new shaft house. It now seems that it will not be long before the company begins to ship ore.

Isabella Gold Mining Company.—The Comet claim has passed to this company. It belonged partly to the Isabella and partly to Frank Saunders and others. The price is said to have been $10,000. Its purchase does away with considerable annoyance, as the claim is in the centre of the Isabella ground and produced considerable rich ore while under lease by the company.

Lucky Guss.—This property is worked under lease by Ashby & Blickenstaff, who sub-lease part of it. The company has finished straightening the shaft down to the 10th or bottom level. The new machinery is in place and the new ore house nearly completed. A cage is running in the shaft which is nearly 800 ft. deep. Sinking will begin soon as the leases call for 200 ft. of sinking. Some ore is shipped. The mine belongs to an English syndicate which is represented by Dr. J. McClelland Henderson of Cripple Creek.

IDAHO.

Boise County.

Bon Accord.—This company's dredge that capsized and sunk last summer is nearly in working order again under Wm. Bray, superintendent, at Bannack. Originally the hull was 110 ft., with 60-ft. beam, and 6 ft. draft, carrying 380 tons of machinery, 132 tons of which was suspended at a height of 32 ft. The machinery has been stripped from the dredge and the height reduced to 8 ft. The dredge on the Coke Company's ground, built last season, is ready to commence operations and the Gold Dredging Company's 2 boats—electric and steam—are also in shape for the season.

Elmore County.

Commonwealth Gold Mining Company.—This company, at Rocky Bar, has been operating successfully for some time past, and now has a 10-stamp mill at work. The question of enlarging the mill is under discussion.

Idaho County.

Buffalo Hump District.—Late reports from this district are to the effect that there are only 3 properties working in the district now, and they employ a force of some 15 men each. It will be at least 6 weeks before the snow is gone, and nothing can be done in the way of prospecting before the 1st of July.

Shoshone County.

Mining Conditions.—As a result of the order forbidding mine owners to employ men who refuse to renounce the unlawful acts of the Miners' Union, the mines at Gem, Burke and Mullan are now closed. The Bumper Hill & Sullivan Company is working its mine and hurrying to rebuild its mill. The Last Chance Mine, near the Bunker Hill & Sullivan, at Wardner, has also kept at work.

Washington County—Seven Devils District.

(From Our Special Correspondent.)

With the disappearance of snow Cuprum is livelier. The Snake River slopes are covered with prospectors, partly because the snow is off there and partly because the rich find in the Vaughn Boy has made the river more popular. The ore body in the Vaughn still continues, though the main tunnel is 120 ft. with cross-cut of 80 ft., all in ore. The best yet found is now in the face of the tunnel and is high grade. Messrs. Giroux and Shear, acting for W. A. Clark of Montana, have bonded the Blue Bell and Apex, owned by Vaughn & Cox, for $50,000; the Fraction Dollie Gray, Gray Eagle and the Centipede, owned by Vaughn & Hunsacker, for $51,000, and the Hoopup Bill and the Sunrise, owned by Mr. McCarty. These properties have been bonded for one year; work to begin June 1st. They adjoin the side and end lines of the Vaughn Boy and the advent of Mr. Clark in this district may mean much in rapid development. Work is being pushed on the Blue Jacket. A raise of 180 ft. to connect the shaft and tunnel has been started. Work has also begun on the Queen. The ore body is being followed and high grade ore taken out.

MINNESOTA.

(From Our Special Correspondent.)

The continuation of the Buffalo strike has reduced ore shipments. The companies have found lake tonnage scarce. There is renewed agitation over discontinuing trimming at upper lake ports, and it is entirely probable that trimming will in a very short period become obsolete. The Mayor of Escanaba has interceded in behalf of the trimmers there, but there seems little reason for continuing a practice that is not indispensable now.

A number of officials of the American Steel and Wire Company have visited the Mesabi Range recently, taking in their new property, the Sauntry. They also visited the Vermilion Range as far east as Ely, and briefly inspected the outlook there, where they have now no interests.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Owners of the townsite of Eveleth, on part of which ore bodies of considerable size are discovered, are busy arranging for the transfer of the village to a new site on the hillside near by. Streets are being graded, water mains laid, sewers put in, and sidewalks built in the new portion, all by the original land owners, who will give a better village than the one left. It is expected that the new find will rank with the large deposits of the Mesabi.

Canton.—Tracks are being laid to the 150,000 ton stock pile of this mine, and it is to be shipped. It was mined in 1895 and '96. It is not likely that the mine will be worked this year.

Fayal.—By the explosion of a box of dynamite last week 6 men were injured, 2 fatally. Ore shipments one day last week over the docks of the Duluth & Iron Range Road, at Two Harbor, were 40,116 gross or 44,939 net tons. This is a tremendous amount of stuff to handle in one day from cars to ships.

Lake Superior Consolidated.—These Hibbing mines are short of men and are sending out much less ore than they should. Perhaps 300 men might be taken on. An advance of 10% has been made to surface labor.

Ohio Mining Company.—Two steam shovels are loading ore at this Virginia mine and shipments are heavy. The present will be the best season this mine has ever seen. All the stripping is by hand.

Sauntry.—A large outfit of machinery is being installed, 2 heavy steam shovels and 2 large locomotives being already on the spot. Three locomotives are to come as soon as built, and a third shovel will be on the ground in July, when the mine will be shipping ore. About 100 men are employed days only, and a night shift will be added at once.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The demand for ore during the week ending May 21st was fairly good, but considerable ore has accumulated, and the market is noticeably weaker than a few weeks ago, with a chance of going lower if the smelter men can force it down. The price for the fancy grades is still slightly above the Association scale, but the lower grades are selling at the scale, and only two cars brought $50, the top price for the week. One car of extra good ore brought $48 per ton, but outside of that the bulk

of the sales were made at $47 per ton. At this price Joplin sold 22 cars, Oronogo 17, Webb City and Carterville 10, Stotts City 3, and Hells Neck 1 car. Lead ore sold throughout the week at $26, the price paid last week. During the corresponding week last year top grade zinc ore brought $27 per ton, and lead sold at $24.75 per 1,000. The zinc sales then were less than for the week just closed by 2,441,260 lbs., and the value was less by $127,628. For the corresponding 20 weeks of last year the lead sales were greater by 484,700 lbs., the zinc sales were less by 36,787,810 lbs., and the value was less by $2,086,929. Compared with the preceding week, the sales show an increase of 71,080 lbs. of lead, but a decrease of 574,170 lbs. of lead and a decrease in the value of $10,463. Following is the turn-in by camps:

	Zinc, pounds.	Lead, pounds.	Value
Joplin	1,989,450	286,350	$52,203
Oronogo	952,960	10,300	22,223
Carterville	1,319,080	164,050	31,743
Hells Neck	184,520	80,430	6,480
Webb City	605,930	41,220	14,705
Belleville	382,650	4,880	9,251
Central City	764,360	10,330	17,467
Duenweg	246,750	116,750	7,971
Stotts City	124,500	.....	2,935
Carthage	76,160	.....	1,839
Galena-Empire	2,185,640	223,890	51,979
Aurora	1,266,000	30,000	22,800
Granby-Newton Co.	234,000	7,000	4,277
Total for week	10,373,430	990,240	$245,873
Total 20 weeks	203,506,420	18,184,510	$4,381,373

There is still the greatest activity in mining transactions, and with settled weather, arrivals are increasing. There were over 50 arrivals at one hotel from one train one day this week, and accommodations are at a premium. The Oskaloosa Mine at Galena was sold Friday to an Eastern syndicate for $25,000, and a good round price was refused by Hugh McIndoo and his associates for two of the big dividend paying properities owned by them. The Wild Rose and the Rose Leaf mines, on the Taylor land west of Joplin, have been sold to a company who will incorporate under the name of the Sunday Mining Company. The purchase price was not made public. John P. Agnew has purchased the 40 acre tract on Turkey Creek, north of Joplin, belonging to D. M. Whitworth, for $4,000. It was one of the occasional bargains still picked up, as the land produced good ore several years ago, when it did not pay to work it on account of the low price and the expense of pumping. Ohio parties have purchased the remaining 42 acres of the James A. Miles farm, west of Joplin, for $10,000. The American Zinc, Lead and Smelting Company, of Boston, Mass., has purchased the 80 acre lease known as "The Cornfield," at Carterville, from Daugherty, Davey & Daugherty, for $36,000. Colley & Company have purchased the Troup 40 acre tract at Carterville for $100,000. The stock of the Troup Company was included in the deal. The company was capitalized at $160,000, and the property is a good one, but a bare majority of the stockholders have controlled the property for years, and the friction with the minority stockholders has prevented necessary improvements. Only a small fraction of the 40 acres has ever been worked. Davis, Dolson & Applegate have sold their Blind Snake Mine on the McKibben land, east of Joplin, to Thomas Clary and Leavenworth, Kansas capitalists, for $6,000. Thirty-five acres at Duenweg was sold last week by J. W. Taylor to J. W. Ground, of Carthage, for $40,000. A large number of new plants are in construction, and the milling capacity of the Joplin District will be more than quadrupled by the close of the year.

MONTANA.

Lewis & Clark County.

Alpha & Omega.—James McCauley and associates have secured a bond and lease on the property of this company, a short distance east of Stemple on the head waters of Virginia Creek, 30 miles northwest of Helena. There are 2 patented claims and a 10-stamp mill. The claims were located in 1884. Extensive development work was done and a considerable number of gold bricks have come from the mill.

Montana Mining Company.—The April output was 2,820 oz. gold and 18,750 oz. silver from 6,690 tons of ore crushed and 3,939 tons of tailings from the dams; treatment of tailings costing $6,821, and the return being $16,800. The total value of the product was $50,400 and the expenses were $52,600, leaving a net profit of $14,600.

Peck Concentrator.—This plant, at East Helena, is handling, according to a local paper, 240 tons daily of tailings, which are concentrated 3 to 1 and shipped to the East Helena smelter. The tailings are ground by Cornish rolls and 6 ball mills and then pass to 2 Peck machines. Electric power is furnished by the plant on the Missouri River. The Peck machine is stated to give excellent results on fine slimes. F. W. Rossberg, of Helena, is general manager.

Madison County.

Alder Gulch Consolidated Mining Company.—This company has begun work on its placer claims near Virginia City, and is working a good force of men under William F. Kammerer. This company has been working its claims several years, and the clean-up has been satisfactory. Owing to the large amount of snow in the mountains there will be an abundance of water this season, and it is expected the output from the placers will be correspondingly large.

L. A. Fenner has started up his placer plant and is working a full force of men.

B. & L.—A company has a lease on this Bald Mountain property near Pony and is putting up a 10-stamp mill and exploring the vein. G. J. Calvert is foreman.

Chicago Mining and Developing Company.—This company, under the management of E. O. Smith, is pushing work on its dredging boat at the mouth of Alder gulch, and will have it in operation about June 1st on ground leased from the Conrey Placer Mining Company. The Conrey Placer Mining Company is also building a similar dredge on its ground at the mouth of the gulch, which will be ready for operation this summer.

German Bar Mining Company.—This company has had its dredge at Adobetown in operation about a month and is now working about 30 men.

Silver Bow County.

Anaconda Copper Mining Company.—William Rockefeller, William G. Rockefeller, H. H. Rogers and A. C. Burrage have been elected trustees. To make room for the new trustees the following resigned from the board: E. H. Clark, L. T. Haggin, H. B. Parsons, and R. P. Lounsbury. The remaining three trustees, who hold over, are J. B. Haggin, Hamilton Smith and W. L. Bull, the last two representing the English interests in the company.

NEVADA.

Lincoln County.

(From Our Special Correspondent.)

April Fool.—Superintendent Healey has increased his crew of miners to 35, and would like to get several more good rock men. A. H. Wethey, of Butte, Mont., paid $25,000 toward the purchase of the property recently. It is said this is in the interest of Senator Clark, of Montana.

De La Mar.—Matters move as regularly, with 9,000 tons mined and cyanided monthly. The ore nearly holds up its 1898 grade, but what it falls short in quality is made good by greater proven reserves. The force numbers 325 men. No important additions have been made to the plant recently. It is believed the mill continues to make the cleanest gold saving of any cyaniding plant extant, exceeding 95%.

Storey County—Comstock Lode.

Comstock Pumping Association.—The second Evans elevator in the C. & C. shaft was installed May 11th and started regular work on May 14th. At the 1,750-ft. station, where the large valves are in place that control the water in the pressure column, the pressure being 870 lbs. to the sq. in., a system of 1½-in. valves is introduced to relieve the pressure and discharge columns of jar, while opening and closing the main valve. This system is made of heavy hydraulic valves, pipes and fittings, arranged so that it can be used for either elevator. While testing the second elevator on May 11th for a few minutes, Superintendent McRoss ran both elevators, discharging about 8,000 gal. of water per minute, equal to 11,500,000 gal. in 24 hours, probably the greatest quantity of water that has ever been discharged continuously from any one shaft in the world.

NEW MEXICO.

Taos County.

Copper Hill Mining Company.—This company J. H. Turner, manager, has just purchased a 100-ton concentrating mill from the Mine and Smelter Supply Company, of Denver, and expects to erect it in 4 months. R. B. Turner, of Butte, Mont., has been in Denver lately, designing the mill and making contracts for the company.

Fraser Copper Mines.—These claims, near Amizett, are reported bonded to William Brandreth, of Sing Sing, N. Y., and J. H. Hersey, of New York city, for $112,000.

Rio Hondo Copper Company.—This company claims to own property on the southwest slope of Frazer Mountain between the North Fork and Lake Fork of the Rio Hondo River in the Rio Hondo mining district. The claims owned are the Wigwam, Mazzarotte, Silver King, and Azone, all patented, and the North Side, Alpena. Muskegon, Hidden Hand, Cliff, also the Stony Point and Zone, both mill sites. These are known as the Fraser Mountain Mines, and are still in the prospect stage. Some New York people are interested.

NEW YORK.

Oneida County.

Franklin Iron Manufacturing Company.—M. A. Hanna & Company, of Cleveland, O., have leased the furnace at Clinton and will put it in blast as soon as it can be got in shape. Ore will come from the old ore beds near Clinton, but coke from the Pittsburg District will be used instead of coal. The furnace has been out of blast since 1892. The members of the Franklin Iron Manufacturing Company are: A. E. Headstrom, of Buffalo; E. R. Holden, of New York; F. F. and H. S. Holden, of Syracuse, and C. H. Smyth, of Clinton.

PENNSYLVANIA.

Anthracite Coal.

Delaware & Hudson Company.—The coal in this company's No. 4 colliery at Plymouth, which shut down recently, will be taken out through No. 5 and run through the new breaker The No. 4 shaft was sunk in 1852 by Patten & Fende.

Lehigh Valley Coal Company.—Extensive improvements are under way at this company's Centralia Colliery. Slopes and gangways are being driven and a large tunnel also to tap the Continental and North Ashland beds.

Philadelphia & Reading Coal and Iron Company.—This company is to build a large breaker at Shenandoah to take the coal from the Kohinoor, Turkey Run and West Shenandoah collieries, doing away with the breakers at the first two named places, and thus restricting the outside laboring forces.

An account of stock is being taken at Kehley Run Colliery for a transfer on June 1st of that colliery from the Thomas Coal Company. The Kehley Run breaker will be razed and the output will be combined with that of Indian Ridge Colliery.

These changes will leave but 3 breakers of the Philadelphia & Reading Company in Shenandoah, instead of six, resulting in a big reduction in the number of employees.

Bituminous Coal.

Osborne, Saeger & Company.—The Westinghouse Electric and Manufacturing Company recently completed the installation of an electric plant at North Buena Vista. The mines border on Youghiogheny River. The coal is in seams 5 to 10 ft. in thickness, mined in rooms 30 to 40 ft. square. The average output of the 3 mines is about 200 tons a day. The electric plant at the mine mouth consists of a 100 k. w. generator, belted to a 140 H. P. engine, supplying current at 500 volts. Two feeders of bare copper wire run through the mines. The workings are lit by electric lights, and 5 coal cutters are in daily use. Each cutting machine requires 2 men. The coal is cut by a circular revolving plate to a depth of 5½ ft. along 2 sides of a square and then shot down. The mine is thoroughly ventilated by a double fan system.

SOUTH DAKOTA.

(From Our Special Correspondent.)

Wyoming, South Dakota & Eastern Railroad Company.—This company, incorporated at $6,500,000 at $100 per share, proposes to build a road 165 miles long from Pierre to the Black Hills. Officers of the company are: President, John R. Brennan; treasurer, Jas. W. Fowler, both of Rapid City; directors, Virgil T. Price, Myron Wilsie, Rapid City; A. Everett, C. H. Burke, C. C. Bennett, H. E. Horder, Pierre.

Custer County.

(From Our Special Correspondent.)

Grand Junction.—This mine is worked under bond to C. C. Crary and J. C. Spencer. Considerable high grade ore has been shipped. It is not suited for amalgamation. The vein is 20 ft. wide.

North Pole.—Ore has been encountered in this claim, owned by Dennis Henault and Phelix Mechand, of Custer, located south of Vigilante, 8 miles west of Custer. A shaft has also been sunk 80 ft. and a drift run 30 ft.

Lawrence County.

(From Our Special Correspondent.)

Illinois-Dakota Company.—This company has struck a vein of silver-lead ore in a drift at the bottom of 85 ft. shaft at the head of Little Strawberry Gulch. Company is represented in Deadwood by C. E. Davis.

Little Blue Fraction.—Regular shipments are made from this mine, which joins the Wasp No. 2. A carload was treated in the cyanide plant at Spearfish last week. Owners are planning to put in a cyanide plant.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—During the week ending May 20th the bullion and ore forwarded East from the different smelteries and camps of the State amount to 15 cars, or 616,160 lbs. lead-silver bullion; 3 cars, or 123,439 lbs., copper bullion; 39 cars, or 1,106,460 lbs., lead-silver ore.

Mingo Smelter.—The Pennsylvania plant is to be designated by its old name—Mingo. Consignments are billed to "the American Smelting and Refining Company by the Mingo Smelter," indicating the Germania cannot handle all the ore the combine wishes treated here. Electric power, supplied from Big Cottonwood Cañon, is installed and a slag hoist is ready. Five Brucknerers have been rekindled and 6 reverberatories

brought into service. On May 20th 1 stack was fired and a second will follow shortly. The plant is under Dr. J. H. Tucker. All Utah custom smelting is managed by T. R. Jones, the combine representative, which arrangement achieves a handsome saving, on one side at least. It is expected the Mingo will handle 200 tons of ore daily.

Utah Consolidated.—On May 17th the first pig copper was poured, and the first carload was ready to ship on May 20th last. The electric trams, elevators and numerous novel labor saving devices all work admirably. Some slight annoyance was first met in the Wethey roasters; other than this there was not a snag, though the breaking in of a raw crew takes a little time. Mr. Klepetko states it will be June 15th before he handles the full quota of 250 to 300 tons daily, when his connection with the plant ends. Grade of ore thus far received is over 10% copper, and the pig exceeds 99% copper, $60 gold and 40 oz. silver per ton.

Beaver County.

(From Our Special Correspondent.)

Cactus.—On May 16th suit was brought by Marshall, Royle & Hempstead, Salt Lake City, representing Demachy & Seilliere, Paris, France, to recover $75,524, and 2 days later a second suit was filed by same for $40,654, and there are other debts owed abroad. This undoubtedly means the extinction of the Cactus Mining Company, organized in 1882 by French financiers to work the Cactus Mine, 2½ miles northwest of Frisco. It is a large low grade copper proposition, which could not be made to pay on account of distance from railroad and kindred drawbacks. Later a concentrating mill with vanners was erected, but the price of copper would not afford a profit. It is understood the property has been favorably reported on, and so soon as valid title can be had a new company will be organized, with headquarters in Paris, and active mining resumed.

Horn Silver.—Shipments are maintained at about 800 tons per month, ½ concentrates and ½ crude. About 1 car, or 30 tons, a week is taken from 900 level. A drift to the south is just started from bottom of shaft, or 1,600 ft.

Washington.—Incline is down 250 ft., with fair ore showing. Some 15 cars have been shipped, which have a little more than paid for development to date.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—In the week ending May 20th there were forwarded from the 3 shipping points of the district 71 cars of ore and 8 cars of concentrates, contributed as follows: Grand Central, 30 cars ore; Bullion Beck, 10; South Swansea, 8; Gemini, 6; Godiva, 5; Uncle Sam and Humbug, 5; Centennial Eureka, 4; Lower Mammoth, 1, and Dragon Iron, 6 cars hematite for flux. Bullion Beck sent out 5 cars of concentrates and Mammoth 3 cars.

Tintic Iron.—On May 22d, at Salt Lake City, the papers were signed and the final payment of $250,000 made, completing the transfer of this property, familiarly known as the Dragon Iron Mine, from L. E. Ritee and George Y. Wallace to Samuel Newhouse, Thomas Weir and others.

Emerald.—Superintendent Oglesby says there is no material change, though encouraging indications abound.

Dana Group.—M. F. Fitzgerald is charged with forging the name of D. S. Dana to a deed conveying this ground, which is bonded to Brown, Terry & Woodruff for $75,000. The tract is in a locality now receiving much attention.

Joe Bowers.—Charles T. Burnham on May 17th brought suit for ¾ of the "Joe Bowers Lode second."

May Day.—The first shipment of a 28-ton lot of lead-silver rock was made the other day. John A. Hunt located this Godiva Hill claim in 1890.

Swansea.—No shipments have been made for over a month. Another treatment contract is signed, and this reliable producer will send forward its full ore quota so soon as the new hoist is in place.

Utah.—One of the richest lead-silver ore bodies uncovered in the Fish Springs section is causing joy among the owners. The silver content is 400 to 800 oz. per ton and as shipped is ½ lead. It gives promise of proving one of the largest ore bodies in the mine's history.

Piute County.

(From Our Special Correspondent.)

Sevier.—It is announced that Standard Oil people have purchased the Newhouse interest in this company, but the interest was an asset of the Utah Consolidated and was included in the transfer. The local notion of it being a separate and distinct deal is wrong.

Summit County.

(From Our Special Correspondent.)

Keystone-Fortune.—An examination is just completed for New York parties, who have a bond on the property. It is said the report is favorable.

Lower Mammoth.—Shaft is finished to 600 station. Superintendent Morris has out some good copper and galena ore, and states that the mine shows improvement.

Morgan.—An offer of $100,000 for the company's realty has been made by Theodore Benback, and a stockholders' meeting is called for June 3d to act in the matter. It is said that Mr. Benback's proffer is in the interest of the Daly-West.

Park City Shipments.—For the week ending May 20th the crude ore and concentrate products forwarded through the Mackintosh sampler were: Silver King, crude 716,620 lbs., concentrates 352,740 lbs.; Anchor, concentrates, 203,485 lbs.; Ontario, crude, 206,100 lbs.; Girard, concentrates, 22,670 lbs.; Wright, concentrates, 21,990 lbs; total, 1,513,615 lbs. It is expected that Daly West will begin sending out ore by the end of the month.

Tooele County.

(From Our Special Correspondent.)

Chloride Point.—Date for restarting the mill is May 25th. At first 40 to 50 tons daily will be treated.

Geyser Marion.—It is said the company has paid all debts and the physical condition of the mines has greatly improved.

Sacramento.—Probably this will be the first mine of the Mercur region to be supplied with power from the Jordan River plant. Matters remain unchanged at mine and mill.

De La Mar's Mercur Mines.—Mr. Clement says the cyaniding plant is a complete success, the credit for which is primarily due to D. C. Jackling. In April the bullion gold recovery was 86.8%, and in May it will exceed 90%. Tank capacity is being increased 50%, to 26 tanks—each 50 by 25 ft. and 5 ft. deep, carrying a charge of 250 tons—and with the 3 roasting furnaces now being installed, making 9 in all, will give a safe capacity of 25,000 tons per month. Ore is mined and milled at a cost of $2 to $2.75 per tons, according to whether it needs roasting or not. The new refinery will soon be ready, when bullion will be shipped instead of cyanides. Experiments to employ coal dust for the furnaces point to success, and will make a great saving in labor and fuel. The electric power from Provo Canyon has been a sore disappointment, and this is the only unsolved problem. Under Duncan McVichie's charge the mines make a magnificent showing, and the reserves exposed warrant bringing the property to its present efficiency.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Anaconda.—The tunnel is in 249 ft., and shows a 2 ft. vein of black quartz.

Ben Hur.—The shaft is down 35 ft.

Chespa-Blue Jay.—A shaft is down 27 ft., about 150 ft. southwest of the mouth of the Morning Glory tunnel, to prospect for the extension of the Morning Glory vein.

Chico Gold Mining Comapny.—This, a Tacoma, Wash., corporation, has purchased the Jim Blaine Fraction, Advance Fraction, Standard Fraction and Chico claims, lying south of the Jim Blaine, which it intends prospecting for the south continuation of the Republic vein.

Cuba.—A new shaft is being sunk about 350 ft. south from the old one.

Delta.—The shaft is down 45 ft.

Discovery.—This Sheridan property has been incorporated at Montesano, and work will start immediately.

El Caliph.—Work in the shaft is suspended. The tunnel is in 356 ft., with no sign of the vein. The superintendent of the Morning Glory says that the El Caliph tunnel will have to run 90 ft. further to strike the Morning Glory vein. All visitors are now denied admission. The dump shows that the tunnel is entering a formation like that which encases the vein on which the El Caliph and Morning Glory shafts were sunk.

Friend Gold Mining Company.—The company has begun work on the Mountain Belle, on Gold Hill, by ditching to locate the continuation of the Gold Ledge vein.

Georgie Reed & Bull Dog.—This group has been sold to a Spokane, Wash., syndicate.

Jumbo.—The tunnel, in 136 ft., shows a lot of ledge material, but no values of any consequence are reported. A surface crosscut lead at the surface is prospecting well.

Lone Pine.—The east drift is in 5 ft. of solid quartz, averaging $25 per ton. The main tunnel is being pushed, and another vein, which crops out at the surface, may be encountered shortly.

Morning Glory.—The directorate of the company is changed, and it is stated that visitors will be admitted hereafter. The superintendent says that the Morning Glory vein is 14 ft. wide, with part of the filling very rich, and the balance no good.

North San Poil.—The shaft is down 105 ft. A crosscut shows the vein 8 ft. wide, the ore averaging about $30 per ton. The crosscut is being pushed east into the Baby Fraction ground.

Palo Alto.—The main tunnel is being timbered from 300 to 315 ft. in, where the ground had caved.

Phoenix & Milton.—A vein is exposed about 20 ft. by a prospect hole, down 7 ft., that is in direct line with the Morning Glory and Blue Jay.

Republic Consolidated Gold Mining Company.—The contractors in the No. 4 tunnel are running through 12½ ft. of ground per day, or 2½ ft. more than the expected average. The winze, down 55 ft. from the No. 3 level, shows 8 ft. of ore on the pay shoot, that averages $65 per ton. The mine is running smoothly, with no change to report.

Surprise.—Samples taken from the crosscuts show conclusively that the Surprise has great merit. The average of the 9 samples, omitting a rich one, was only $6.07 in silver and $10.63 in gold, or $17.70 per ton. The lowest assay came from the footwall side.

Tom Thumb.—The shaft is down 150 ft., having passed through a 4 ft. quartz vein. A crosscut west for a second vein is in 30 ft.

619.—The tunnel will be pushed 400 ft., where it is expected to cut the Mountain Lion lead. A tram car and 800 ft. of 12 lb. steel rails are in transit.

WYOMING.

Albany County.

(From Our Special Correspondent.)

Decomposed Granite Quarries.—These quarries at Sherman are loading with 2 steam shovels. The company is opening a new quarry west of Sherman, where one shovel will work. The demand for the product has trebled in the last three years, as it makes the most excellent ballast and road metal. The deposit is large and very cheaply mined.

Keystone.—Messrs. McIntyre & Eastman, of Denver, Colo., recently went to the Keystone district, it is reported, to open the Keystone Mine and work the 20-stamp mill, closed in the fall of 1892. The shaft is 220 ft. deep, with some 2,000 ft. underground workings. The property is owned by J. W. Young, of Salt Lake, and has produced $100,000 in gold.

Carbon County.

(From Our Special Correspondent.)

In the Battle Lake District there is much activity, notwithstanding the snow which still remains.

Doane.—A saw mill and a new boiler, engine and air compressor are now on the way to the Rambler or Doane Mine, at Grand Encampment, which will be worked extensively the coming season.

Ferris-Haggerty Mining and Milling Company.—The company has been hauling ore from the Rudefeha on sleds to the transfer, 8 miles from Battle, on the road to Saratoga. Some 200 tons of high grade copper ore is piled there to be hauled to the railway at Ft. Steel. Heavier pumping and hoisting machinery is about to be installed at the Rudefeha.

FOREIGN MINING NEWS.

AFRICA.

Transvaal.

The production of gold in the Transvaal for April and the four months ending April 30th is reported as below, in crude ounces:

	Witwatersrand.	Other districts.	Totals.
January	410,145	20,865	431,010
February	404,835	20,831	425,166
March	441,578	22,458	464,036
April	439,111	21,238	460,349
Totals	1,695,169	85,392	1,780,561
Totals, 1898	1,272,833	86,369	1,359,202

The Witwatersrand shows this year an increase of 422,336 oz., or 33.2%, and the other districts a loss of 977 oz., or 1.1%; the result for the whole Transvaal being a gain of 421,359 oz., or 31.0%. The total production this year was equivalent to 1,460,060 oz. fine gold, or $30,179,440.

CANADA.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

Rossland Ore Shipments.—The 1899 shipments to May 18th, amounted to 44,230 tons. The Le Roi shipments average about 352 tons daily. War Eagle 256 tons daily. Iron Mask 126 tons weekly. Center Star 18 tons weekly.

British America Corporation-Le Roi.—According to the statement of W. A. Carlyle, the head office in London has decided to do more extensive development than heretofore. The output of the mine is to be trebled. The new vertical shaft is to be sunk to 2,500 ft. at a short distance above the compressor, where there is a large showing on the surface. The new shaft is to be 6 compartments, 12x18 inside the timbers.

The two cage compartments for hoisting will be 4x9 ft. each, to carry two mine cars. Power will be supplied by a 500-H. P. electric hoist, with a speed of 1,600 ft. per minute. The entire plant has been designed to sink to 2,500 ft., with an output capacity of 1,500 tons. The shaft is similar to that in the Homestake Mine, South Dakota. These improvements will begin in a few days. D. W. Brunton, of Denver, Colo., has designed the electrical machinery, and he will supply most of it.

Center Star.—This company has begun small shipments from the vein which is in dispute with the Iron Mask. The contract for the new steel gallows frame has been let to the Gillete-Herzog Company of Minneapolis, Minn., and work begins immediately. It will be completed by October and will cost $30,000. The War Eagle and Center Star are under the management of J. B. Hastings, and will have when both are running a capacity of 67 drills. Until the new plant is complete shipment from the Center Star will be from the old workings.

Iron Mask.—The annual meeting took place in Spokane recently. The ore bin is to be enlarged to 3 times its present size, or 300 tons. The management is arranging to ship 50 tons a day. The shaft is to be deepened 100 ft., or 300 ft. in all. The different levels are to be opened up. Additional machinery has been ordered.

Slocan Ore Shipments.—For the 2 weeks ending May 14th there were shipped from Slocan mines 1,109 tons of ore as follows: Payne, 648; Last Chance, 170; Jackson, 47; White Water, 169; Dardanelles, 75. The great bulk of this ore was shipped to Great Falls and Omaha smelters; the remainder was shipped to Everett and Kaslo.

Virginia.—An assessment of $5 per share has been levied, payable July 10th. It is understood that this assessment is to raise money to drift through barren deposits. It is time that the management investigated the lower workings of this company.

White Bear.—The company has been reorganized and its capital changed from 2,000,000 $1 shares to 3,000,000 10c. shares. Work will be resumed June 1st.

Nova Scotia—Cape Breton.

Cape Breton Copper Company, Limited.—This company, we are informed, has concluded a deal looking toward the purchase of 2 sq. miles of copper areas at Eagle Head, Gabarus Bay. The property has been bonded, and Capt. Andrew Whyte, formerly manager of the Little Bay Copper Mine, Newfoundland, has been engaged to begin exploration work at once. Three veins of chalcopyrite ore crop out on the shore of Gabarus Bay; on the middle one a shaft was sunk 75 ft. several years ago by Mr. Ellershausen. Owing to disagreements with the owners the work was stopped, although the vein was making a fine showing. The location is only 7 miles from the Louisburg terminus of Mr. Whitney's coal railroad, and the water in Gabarus Bay, close up to the shore where the veins crop, is so deep that a vessel can easily load ore to freight to Sydney Harbor, where the Cape Breton Copper Company, Limited, is to build smelting works for its Coxheath ores. Isaac P. Gragg is manager.

Nova Scotia—Guysboro County.

(From Our Special Correspondent.)

Blue Nose Company.—This Goldenville company has returned for April 440 oz. from 1,250 tons of ore milled. Geo. A. Hirschfeld, whose lease has expired on the Stuart Hardman property, has succeeded in leasing the New Glasgo adjoining; Mr. Hirschfeld has been a most successful tributor. Mr. J. B. Neily recently visited this district with an expert, it is understood, to examine several old producing properties, such as the Palmerston, Wellington, Dewar, Dominion, Bowlder, Black Prince, Hayden and Durbey, with a view to consolidating the whole.

Guysboro Gold Mining Company.—This company, of Wine Harbor, has recently returned 267 oz. of gold from 224 tons of ore.

Nova Scotia—Halifax County.

(From Our Special Correspondent.)

Colonial Gold Mining Company.—The 20-stamp mill belonging to this Moose River company was totally destroyed by fire a short time since. The mill was new and carried but $5,000 insurance.

Nova Scotia—Queens County.

Malipisigate District.—The Cassion Hinds mine has returned 101½ oz. of gold from 305 tons of ore for April. The Block House, which has been in litigation for the past year, has settled its difficulties and passed into the hands of Miner F. Foster. A new plant is now being erected.

Yukon District.

The business part of Dawson City, comprising about three-quarters of the buildings in the town, was destroyed by fire on April 21st. The loss, owing to the high cost of lumber and supplies, is estimated at over $1,000,000. One of the heaviest losers was the Bank of North America. The fire started as the result of a drunken debauch in a saloon.

COAL TRADE REVIEW.

New York. May 26.

Anthracite.

With the raising of the blockade on lake shipments at Buffalo, a heavy tonnage is starting for Chicago and the head of the Lakes. The demand in Western territory has not been especially heavy, so, though dealers have been able to get schedule prices without trouble, the amount now going forward will make somewhat doubtful a reported advance in prices scheduled for June 1st. In the East chestnut coal, though in much better supply than it has been, continues to be the size most in demand. It has been most wanted ever since last fall and no one seems to know just why. Egg coal continues correspondingly a drug on the market. It is not thought that the interruption of Lake shipments has resulted in stocks at tidewater accumulating dangerously. The companies have held together well in restricting production. The point of interest in Eastern trade has been Boston, where a lively fight among the large dealers has resulted in some very low retail prices. Buying at the low figures has been active and a large amount of coal will be laid in in advance of the usual season. It is not likely that the large dealers are giving away coal or selling at a loss, but producers are probably enabling their customers to make a little profit. As yet, however, the chances of these cut prices extending West are rather problematical. Coal at New York continues to be quoted at the schedule prices, with sales at prices as far below as for several months. In fact, prices are just a little shaky, with the large companies still firm in their demands.

Bituminous.

The market for soft coal along the Atlantic seaboard shows very little change. The demand at points beyond Cape Cod and from the Long Island Sound ports remains good, as also at New York harbor. All rail trade continues to hold up best. In the matter of vessel supply, it is now pretty plain to shippers that ocean freight rates are not likely to get as low as last year. Car supply from mines to tide is good. Various matters having in view a better defined policy among all the roads regarding coal freights are still unsettled.

Vessel supply at the shipping ports has been light and rates advanced; charter to Boston, Salem and Portsmouth being taken at 85c., while sound port rates are 70@75c.

Prices show no change. The productive capacity of the mines is now so great that it is doubtful if the 10% advance in wages granted in some instances and asked in others will result in advancing seaboard quotations correspondingly; though there will very likely be a smaller difference than heretofore between the actual selling prices and the quotations generally given. These latter continue to be $1.60@$1.65 for best grades at Philadelphia and the Chesapeake Bay ports.

Birmingham, Ala. May 22.

(From Our Special Correspondent.)

There is still a pretty good demand for Alabama coal and the miners are finding plenty of work. A very fair price is being obtained for the product. It is believed that at least 300 more coke ovens will be put in blast soon. Both the Tennessee Coal, Iron and Railroad Company and the Sloss Iron and Steel Company are preparing to blow in more coke ovens, while the Tutweiler Coal and Iron Company is building a good batery of ovens.

Nothing can be heard concerning the signing of a new contract between the miners and the companies next month. The same feeling as has prevailed right along seems to be general.

Chicago. May 23.

(From Our Special Correspondent.)

Anthracite Coal.—Anthracite sales are not very numerous at the present time and one or two cars constitute a large order. The market appears to be a waiting one. Most dealers have but a small quantity of coal in stock and are apparently averse to loading up, awaiting the action of the other fellow. The prospects are for a good trade all summer, business in all lines never having been better. The circular price is apparently maintained at $4.75 for broken coal, with the domestic sizes quoted at $5. These prices are simply May ones, and as no contracts are being taken by the agents beyond May, it is apparent that some effort will be made to lift prices a little.

Bituminous Coal.—Coal continues in good demand, manufacturing and other interests continuing to show great activity. The demand, however, is not so brisk as it was a month ago and there is more soft coal coming to town than is wanted, the rails and yards throughout the city being overstocked, because of the seemingly hasty activity of the shipping interests. With such conditions prevailing prices have eased off and will go lower if something is not done to decrease shipments.

Pittsburg. May 24.

(From Our Special Correspondent.)

Coal.—A big rise in our rivers enabled the coal owners to send out all the coal to the lower markets; the amount aggregated about 4,500,000 bushels; the run was principally of coal boats and is intended for the New Orleans markets; the pools and harbor are now clear of coal.

Pittsburg coal producers secured business against the West Virginia people during the week and succeeded in selling 500,000 tons to the Great Northern Railroad. The West Virginians had the contract last year.

At Cumberland, Md.—Dr. Richard Genstell has sold to Philadelphia capitalists 10,000 acres of coal land in Preston County, W. Va.; price said to have been $100,000. The mines will be opened at once.

Connellsville Coke.—The trade last week was lighter again, but is showing signs of improvement in the next few days. The large furnaces are crowded in the stock yards. The early shipments of iron ore require more space and coke shipments are held back that the heavier materials can be landed near the furnace bottoms. New arangements for receiving coke are rapidly being made, and the usual shipments are expected to be resumed next week or the week after. The production and shipments were lower last week than has ruled for several weeks past. The shipments were nearly 3,000 tons less than production, indicating that about that amount of coke was stocked during the week. Add to the coke stocked are a good many cars loaded and unconsigned. The coming week though will see these loaded cars greatly thinned out and much of the stock lifted.

Prices of coke are said to be rapidly going up; consumption, when the furnaces are all taking coke, is fully up to production, with a likelihood of an increase. It is now thought that little coke will be sold below $2.

Of the 18,907 ovens in the region, 16,464 ovens are in blast; 2,443 idle. Shipments: To Pittsburg, 3,198 cars; sent West, 4,695 cars; sent East, 1,492 cars; total, 9,385 cars.

Shanghai, China. April 3.

(Special Report of Wheelock & Co.)

Coal.—Japan and Cardiff have been in little or no demand, while Sydney Wollongong is very firm, owing to limited stocks. Arrivals for the fortnight were 13,538 tons of all kinds of coal. Quotations are: American anthracite, 15 taels, nominal; Welsh Cardiff, 19 taels; Australian Wollongong, steamer cargo, 12 taels, and other sorts, 6.75@7 taels; Japan, all contracted for; China Kaiping, lump, 7 taels; dust, 5.60 taels; mixed, 5.60@6.50 taels.

Kerosene Oils.—In American little business has been done, and the market has suffered a very serious decline since our last report, transactions having been made at as low as 1.67½ taels per case, and closes with a weaker tendency. Arrivals were 190,000 cases. Stocks are 732,346 cases. Russian Batum has also declined, and is weak at 1.57 taels per case. Stocks are 369,000 cases. Sumatra Langkat is uninteresting, while stocks amount to 78,327 cases.

SLATE TRADE REVIEW.

New York. May 26.

Business is good, and prices are improving in consequence of limited stocks of slate at the quarries. The present favorable condition of the industry is due to the heavy exports last year, which left the quarry banks almost bare of stocks on January 1st. Since the opening of the present year several large export orders have been booked, and our home consumption has increased, so that quarrymen are unable to supply the necessary slate. In the sea green industry particularly there is very little roofing slate of desirable sizes to be had, and much of that being quarried now will be delivered on contract. Consequently the prices of No. 1 sea green roofing slate have been advanced by amounts varying from 25c. to 60c. per square, mainly on export sizes.

In the Pennsylvania regions much activity is reported. The quarries doing an export business are finding difficulty in making prompt shipments on contracts taken early this year.

Slatington and Walnutport report increased shipments of roofing slate this month. For the three weeks ending May 18th Slatington moved approximately 14,899 squares, against 10,858 squares in the same time in April, and Walnutport 460 squares, against 262 squares. From January 1st to May 18th the roofing slate shipments from Slatington amounted to 64,786 squares, and from Walnutport to 1,842 squares.

The Bangor Roofing Slate Manufacturers' Association has been rehabilitated and more harmony now exists. The price-list they have agreed to is generally quoted by the trade.

In export quarters a discussion is on relative to the money to be paid on dead weight by shippers who have made contracts for steamer room and cannot get the necessary amount of slate. It is said that one large exporter has a claim for $900.

So far this month the most slate has gone to London from New York, which received in two days about 3,100 squares.

In the first half of May Great Britain imported over 4,000 squares of roofing slate from this port alone.

The exports of slate from New York in April amounted to $72,941, as against $96,536 in the previous month, and $73,698 in April, 1898. The shipments of roofing slate in April, 1899, were approximately 12,700 squares, of which Great Britain received about 9,400 squares, having an average invoice value of $5.60 per square, against 14,150 squares, valued at $4.33, in March. Germany's receipts in April were about 2,950 squares, valued at $3.42 per square, as compared with 4,750 squares, valued at $4.43, in March. Smaller shipments of roofing slate were also made to Sydney and Dunedin, Australasia. The movement of mill stock (including all manufactures) in April, from this port, amounted to $8,405, or 11% of the total exports.

The freight market at New York is unchanged. To London, 12s. 6d. ($3), or about 86c. per square roofing slate; Liverpool, 12s. 6 d.; Manchester, Bristol, Leith and Glasgow, 15s. ($3.60), or $1 per square; Hamburg, 12s. 6d. prompt, and 15s. near future; Copenhagen, 16s. 3d. ($3.90), or $1.11 per square; Newcastle and Hull, 17s. 6d. ($4.08), or $1.17 per square; Denmark, Stettin, 17s. 6d., all with a 5% primage per ton weight. To Bremen the rate is 15s. net ($3.60), or $1 per square. To Sydney, New South Wales, 15s. net is asked for roofing slate in cases or in bulk.

The list of prices per square for No. 1 slate standard brand f. o. b. at quarries is given below.

Prices of Roofing Slate.

Size, inches	Monson or Br'n ville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14...	6.10	3.40	3.00	3.25	3.50	4.85	2.85	3.50	.....
24 x 12...	6.60	3.40	3.00	3.25	3.50	5.00	2.85	3.50	.....
22 x 14...	6.10	.....	.....	.....	.....	5.00	2.85	3.50	.....
22 x 12...	6 60	3.40	3.00	3.25	3.50	5.00	2.85	3.50	.....
22 x 11...	6.50	3.60	3.25	3.25	3.75	5.00	2.85	3.75	.....
20 x 14...	6.40	.....	.....	.....	.....	.....	2.85	3.50	.....
20 x 12...	6 90	3.60	3.25	3 25	3.75	5.00	2.85	3.75	.....
20 x 11.	6.80	.....	.....	3.50	.....	5.00	2.85	3.75	.....
20 x 10...	6.80	4.25	3.25	3.50	3.80	5.10	3.00	4.00	10.50
18 x 12...	6.80	3.60	.....	3.25	.....	5.00	2.85	3.50	.....
18 x 11...	7.00	.....	.....	.....	.....	5.00	2.85	3.75	.....
18 x 10...	7.20	4.25	3.25	3.50	3.80	5.10	3.00	4.00	10.50
18 x 9...	7.10	4.25	3.25	3.50	3.80	5.10	2.85	4.00	10.50
16 x 12...	6.80	3 60	.....	3.25	.....	.....	2.70	3.50	.....
16 x 10...	7.10	4.00	3.25	.....	3.80	.....	2.70	4.00	10.50
16 x 9...	7.00	4.00	.....	3.50	3.80	5.10	2.70	4.00	10.50
16 x 8...	7.20	4 25	3.25	3.50	3.80	5.10	2.70	4 00	10.50
14 x 10...	6 60	3.60	3.25	3.25	3 75	5 00	2.60	3 75	10.50
14 x 9...	6.50	.....	.....	.....	3.40	4.85	2.60	3.75	10.50
14 x 8...	6 69	3.60	3.25	3.25	3.40	4.85	2.60	4.00	10.50
14 x 7...	6.40	3.60	3 25	3 25	3.40	4.85	2.50	4.00	10.50
12 x 10...	5.80	.....	.	.....	.....	4.60	2.50	3.25	.....
12 x 9...	5.60	.....	.....	.....	.....	4.60	2.50	3.25	.....
12 x 8...	5.50	3.25	.....	3.25	3.25	4 60	2.50	3.25	9.00
12 x 7...	5.00	3.25	.....	3.25	3.25	4.60	2.50	3.25	9.00
12 x 6...	4.80	3 25	.....	3 25	3.25	4.60	2 50	3 25	8.50

A square of slate is 100 sq ft. as laid on the roof.

In Brownville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3/16 in. thick, and Peach Bottom 25c. extra per square. Purple sizes run 24x12 and 14x7, and vary from $3.75 to $4 per square. Variegated purple, $2.25@$2.90 per square, according to size. Intermediate red, 14x 7 and larger, $6; 12x7 and 12x8 in., $5 per square, net. Intermediate sea green, $2 15@$2 .35 per square according to size.

CHEMICALS AND MINERALS.

(For current prices of chemicals, minerals and rare elements, see also page 632.)

New York. May 26.

Heavy Chemicals.—Domestic alkali is not offered for prompt shipment, but for next fire (about June 30th) large orders have been booked at 60@65c. per 100 lbs., f. o. b. works. The foreign article, however, is obtainable on spot at quotations.

Caustic soda has ben contracted for to a large extent at $1.40@$1.42½ per 100 lbs., f. o. b. works. Bleaching powder is quiet, while chlorate of potash is firmly held at slightly higher prices. Imports included 455 casks and 125 bbls. bleaching powder, and 60 cases cyanide of potassium. Receipts of domestic goods were 900 kegs, 1,405 bbls., 1,405 sacks, and 100 drums soda ash, and 537 casks and 55 kegs potash. For the 52 weeks ending May 19th the imports into this port, as compared with the corresponding period last year, show an increase of 71% in bicorb. soda, and decreases of 44% in soda ash, and 21% in sal soda.

Quotations are: Caustic soda, domestic, high test, $1.42@$1.45 per 100 lbs. f. o. b. works; $1.55@$1.65 delivered. Foreign caustic soda, high test, $1.66@$1.70 delivered, according to test and quality. Powdered caustic soda, 2¾@3c. Alkali, domestic, 65@70c; sales reported over next fire at 62½@65c. in bags f. o. b. works; 75@80c. delivered; foreign, 75@80c. Bleaching powder, Liverpool prime brands, $1.45@$1.50 per 100 lbs.; other brands, $1.30@$1.35. Bicarb. soda, domestic, ordinary, $1.12½@$1.25 per 100 lbs. f. o. b. works; extra brands, $2.25@$3.50, less the usual discount; foreign, $2.12½@$2.25 per 100 lbs., according to brand and style of package. Sal soda, domestic, 50c. per 100 lbs. f. o. b. works, less the usual discounts; English, 60@62½c. per 100 lbs. Concentrated sal soda, foreign (crystal carbonate), $1.60@$1.65 per 100 lbs. in large lots, and $1.70@$1.75 in smaller quantities, according to quality; domestic (mono-hydrate crystals), $1.25@$1.35 per 100 lbs.; "Snowflake," $1@$1.12½ f. o. b. Syracuse. Chlorate of potash crystals, 9½@9¾c; powdered, 10@10½c. per lb.

Acids.—Deliveries are largely on contract, though blue vitriol has made further sales at $5.25 per 100 lbs., but is quiet, owing to the lessened demand from agriculturists. Export business in blue vitriol is moderate, and we note shipments made from New York recently to Italy were valued here at about $6 per 100 lbs. This week 220 bbls. were received from Baltimore for export. Imports were 59 cases oxalic acid.

Quotations per 100 lbs. for New York and vicinity are as follows: Acetic acid, commercial, No. 8, $1.40@$1.50; muriatic acid, 18°, $1.10 for drums, and $1.15@$1.75 for carboys, 20°, $1.20@$1.87½; 22°, $1.35@$2.25, according to quantity and brand. Nitric acid, 36°, $3.50@$4.75; 38°, $3.75@$4.62½; 40°, $4@$4.87½; 42°, $4.62@$5.25, according to quantity. Oxalic acid, $6.25@$6.50. Mixed acids, according to mixture. Sulphuric acid, 66°, $1.10 for drums and $1.15@$1.75 for carboys. Chamber acid, 50°, in a jobbing way, $11.50@$12 per ton f. o. b. factory. Liquid anhydrous sulphurous acid (100% SO), 8@10c. per lb., according to quantity. Blue vitriol (copper sulphate), $5.25@$5.50 per 100 lbs. for best grades for large sized lots.

Brimstone.—Market is steady. Best unmixed seconds are quoted at $20.50@$21 per ton, and thirds $18.50@$19. The imports of brimstone into Great Britain for the four months ending April 30th were 6,633 tons, against 5,545 tons in 1898.

Pyrites.—Demand is fair, and prices unchanged. The imports of iron and copper pyrites into Great Britain in the four months ending April 30th were 224,891 tons, against 226,045 tons in 1898. The imports at Charleston, S. C., from May 1st, 1898, to May 1st, 1899, amounted to 52,435 tons.

Several charters have recently been taken to carry ore from Huelva, including the following: Two British steamers of 1,193 and 1,291 tons to Charleston, S. C., at 13s. and 14s. respectively; another of 1,844 tons to Baltimore or Norfolk at 11s. 6d. one port, or 12s. 6d. the two ports, and one of 2,800 tons, dead weight, to Philadelphia, Baltimore or Norfolk at 11s. 6d., June sailings.

Spanish pyrites contain from 46% to 51% sulphur, the American from 42% to 44%, and Pilley's Island, N. F., about 50%. Quotations are: American lump ores (basis 52%), $3.25 per long ton f. o. b. mines, Mineral City, Va.; $5 per long ton f. o. b. mines, Charlemont, Mass., and $6.50 per long ton for Pilley's Island, delivered in New York. Fines are $3 per long ton f. o. b. Mineral City, Va.; $4.25 at Charlemont, Mass., and $4.50 for Pilley's Island, delivered in New York. Spanish pyrites, 11@13c. per unit, according to percentage, delivered ex-ship New York and other Atlantic coast ports.

Fertilizing Chemicals.—In all lines prices have improved, owing to light offerings of animal ammoniates by Western packers. The higher price of gas sulphate of ammonia has brought out a rumor that the English production has been "cornered."

The fertilizer combination is referred to in our "Industrial" column. Imports at New York this week included 4,000 bags muriate, 1,000 bags sulphate of potash and 1,000 bags manure salt. Of exports about 1,000 tons slag, valued at $3 per ton, went to Germany so far this month. The imports at Charleston, S. C., for the year ending May 1st, 1899, were 49,854 tons kainit, 7,080 tons muriate of potash, 4,654 tons manure salt and 18 tons sulphate of potash.

Quotations are: Sulphate of ammonia, gas liquor, $3.15@$3.17½ (basis of 25%), per 100 lbs.; bone, $3.05. Dried blood, high grade, Western, $1.85 per unit f. o. b. Chicago; New York, $1.85@$1.90 per unit. Azotine, $1.85@$1.95 basis New York. Concentrated phosphates (30% available phosphoric acid) 57½c. per unit. Acid phosphates, 13@15% av. P_2O_5, 60@62½c. per unit at sellers' works in bulk. Dissolved bone black, 17@18%, $16@$16.50 per ton. Acidulated fish scrap, $11; dried, $19½@$20 f. o. b. fish factory. Ammonia superphosphotes, high grades, $25@$26 per ton. Tankage, high grade, $16½@$17 per ton f. o. b. Chicago; $18½@$19 at New York. Concentrated tankage, $1.90@$1.95 per unit at New York. Bone tankage, $20@$21; ground bone, $23½@$25 delivered.

Potash Salts.—Quotations are on the basis of foreign invoice weights, tares and analysis to the ports of New York, Boston and Philadelphia, as follows, per 100 lbs., in quantities of not less than 500 tons bulk salts or 50 tons concentrated salts: Muriate of potash, 80@85%, basis of 80%, $1.78, and 95%, $1.81; sulphate of potash, 90%, $1.98½, and 96%, basis of 90%, $2.10½; double manure salt, 48@53%, basis ash, 66c., and 30%, 89c. For kainit, testing 12.4% actual potash, quotations are: $8.70@$8.95 per long ton of 2,240 lbs. Sylvanite is quoted at 37@38c. per unit sulphate of potash.

Nitrate of Soda.—Arrivals this week were the "Old Kensington" with 19,996 bags, and "Oban Bay" with 12,007 bags. The "Hilston" cargo of 23,922 bags, noted last week, has been stored, as the importers were asking $1.60 per 100 lbs. without finding buyers. Of the "Oban Bay" lot 2,000 bags have been sold at $1.57½. Early this week sales were reported at $1.55, and at the close first hands quote $1.57½ for spot. At the latter price some consumers have bought. With an advancing market on the coast and firm freight rates at 28s. 9d., importers are not anxious sellers, and on future business they quote $1.57½@$1.60 per 100 lbs., according to position. There is said to be a scaricty of refined nitrate of soda on the coast market. The European situation is unchanged, but prices are firmer for next fall shipments, when the season for 1900 opens abroad. The imports in Europe in April were 196,710 tons; deliveries in the same month 220,110 tons; stocks on hand April 30th, 52,660 tons, and afloat on the same day, 338,500 tons; making the visible supply May 1st, 391,160 tons. The total deliveries in Europe from January 1st to May 1st were 5,225,000 bags, an increase of 145,000 bags over last year.

Phosphates.—The market continues good, and for export phosphates are well maintained in price. Recently Florida high grade rock was sold at mines at $6, or $8.50@$9 f. o. b. Fernandina, while pebble has been quoted at $3@$3.50 f. o. b. mines. The shipments of phosphates from Fernandina in April were 36,350 tons; from Brunswick, Ga., 4,950 tons; Savannah, 8,545 tons, and Beaufort, 10,310 tons, all rock and for foreign consumption; from Port Tampa, 4,371 tons pebble for domestic use, and 5,483 tons for foreign ports, and from Charleston, S. C., 8,855 tons to domestic ports. The shipments from Bone, Algeria, in the first quarter of this year were 66,185 tons. Imports at New York this week were 2,100 bags phosphates from Antwerp, Belgium. In the export market Florida high grade rock (77@80%) is firmly held around 9½d. per unit or $15 per long ton, while Tennessee 78@80% rock is freely offered for shipment in the next two years at 7¼@7½d. per unit, or about $11.85 per long ton, c. i. f. United Kingdom ports. South Carolina phosphate rock is quoted for same delivery at 6½d. per unit, but available supplies for 1899 shipments are gradually diminishing. The Algerian product is quoted about the same as South Carolina.

We quote: Florida high grade, 75@80% rock, $9.50@$10 per long ton f. o. b. Fernandina. The freight rate to New York is about $2 per ton. Florida land pebble, 68@73%, quoted at $7@$7.50 per ton delivered in New York; South Carolina ground rock, $6 per short ton, delivered in New York; sun dried, $3 per 2,240 lbs. f. o. b. Ashley River; hot-air dried, $3.25 f. o. b. same place, and $3.45 f. o. b. Charleston, S. C. Tennessee phosphate rock, $4@$4.50 f. o. b. mines for export, guaranteed 78% bone phosphate of lime and 3%@4% iron and alumina, and $3@$3.50 for domestic brown, and $1.90@$2 f. o. b. for blue or Hickman County rock, ex-vessel, New York, $9 @$10 for high grade rock. Domestic Tennessee rock averages 75%, while for export it runs as high as 83% bone phosphate. The difference in the price of this phosphate and Florida high grade is owing to the higher percentage of iron and alumina in the Tennessee rock.

Liverpool, May 17.

(Special Report of Joseph P. Brunner & Co.)

In heavy chemicals there is a fair trade passing at steady prices. Brunner-Mond have this week announced a dividend of 30% on their ordinary stock for the 12 months ending March 31st last, in addition to which £111,000 is carried forward. The dividend is 5% and the amount carried forward about £30,000, in excess of the return for the previous 12 months, which is a marvellous result, considering the severe foreign competition and condition of the chemical trade generally.

A disaster occurred at St. Helens on May 12th, owing to a fire at the Kurtz Works, causing an explosion of about 160 tons chlorate of potash, resulting in 5 deaths and a number of persons injured, while the town was partially wrecked. Considering the damage done to the surrounding property, it is surprising the fatalities were not more numerous.

Soda ash is unchanged and business is going on at varying prices, according to market. We quote maximum range for tierces about as follows: Leblanc ash, 48%, £4 5s.@£4 10s.; 58%, £4 10s.@£4 15s. per ton net, cash. Ammonia ash, 48%, £4@£4 5s.; 58%, £4 5s.@£4 10s. per ton net, cash. Bags, 5s. per ton under price for tierces. Soda crystals find a ready sale at £2 17s. 6d. per ton, less 5% for barrels, although lower prices are taken for certain favored quarters. Bags, 7s. per ton under price for barrels.

Caustic soda is in moderate request and firm at £6 for 60%, £7 for 70%, £7 10s. for 74%, and £7 15s. per ton for 76%, net cash.

Bleaching powder is held for £4 17s. 6d.@£5 per ton, net cash, for hardwood, but outside makes are only offering to a limited extent.

Chlorate of potash is in better request, and a fair business is reported to have been done, principally for the Continent, although some

American orders have also been placed. Quotations are unchanged at 3½d.@3⅝d. per lb. for crystals, and 3⅝d.@3¾d. per lb. for powdered, according to quantity.

Bicarb. soda is without change, and is selling at varying prices, according to destination, ranging from £5 5s.@£6 15s. per ton, less 2½%, for the finest quality, in 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia has continued to advance, and is very scarce. To-day £13 per ton, less 2½%, is about nearest spot value for good gray, 24@25%, in double bags f. o. b. here, the difficulty being to find sellers.

Nitrate of soda is steady at £8 5s.@£8 10s. per ton, less 2½%, for double bags f. o. b. here, and a moderate trade is passing.

IRON MARKET REVIEW.

NEW YORK, May 26, 1899.

Pig Iron Production and Furnaces in Blast

Fuel used	Week ending May 27, 1898.		Week ending May 26, 1899.		From Jan., '98.	From Jan., '99.
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons
An' racite	27	18,825	37	32,450	387,918	584,499
Coke.....	149	209,475	160	213,900	4,367,304	4,358,745
Charcoal.	18	6,625	20	4,925	122,345	107,583
Totals..	194	234,925	217	251,275	4,877,567	5,050,827

The covering of requirements for the second half of the year continues, and large contracts have been made for Bessemer pig in Pittsburg. The current price is $17 at Valley furnace, and an additional $1 is expected soon. Heavy orders for gray forge and the various grades of foundry have been placed in the West. In the South also some large contracts have been made for foundry iron, gray forge and basic pig.

Billets are also in demand, but there is a good deal of uncertainty about prices, much depending on buyers' necessities and the deliveries wanted. We have heard of a price of over $30 in Philadelphia, where a near-by delivery was needed.

For finished material demand continues very active, and there is plenty of work offered for contract.

The general situation is rather uncertain. The market is getting into an excited state, and there is danger of a rush to buy, which may culminate in one of those crazes where people lose their heads and are willing to pay anything, if they can only get what they want. Some of the so-called "organs" of the trade are doing their best to bring about such a state of affairs; which most people see would be anything but a desirable one.

Notes of the Week.

The meeting of the Amalgamated Association of Iron and Steel Workers in Detroit has nearly completed the new wages scale, which will be presented to the manufacturers. It is probable that there will be very little discussion over the scale this year; and also that it will provide for a considerable advance.

The reports concerning the Carnegie Company have been cut down somewhat by an authoritative statement from Mr. Frick that the consolidation will include only what are known as the Carnegie properties, and that the capital stock will be $250,000,000, all in one class of stock. No preferred stock and no bonds will be issued.

Two British steamers are now on their way to Philadelphia with cargoes of iron ore from Spain, and several other charters have been made. It is understood that negotiations are on foot for considerable quantities of Spanish ore; also for some ores from Elba. The freight rate current just now from Bilbao is about $2 a ton for full cargoes.

Birmingham Ala. May 22.

(From Our Special Correspondent.)

If there is anything new in the iron market in this section to report this week, it is that the quotations are very stiff, with a tendency to increase, as the volume of business continues exceedingly heavy. The output of the district has been increased recently by the blowing in of two more furnaces, one belonging to the Republic Iron and Steel Company and the other to the Sloss Iron and Steel Company. There are three more furnaces preparing for the torch in the immediate Birmingham District, while in the entire State there will be no less than half a dozen furnaces to go into blast within the next 60 days. The furnace at Attalla will soon be put in motion, while the Jenifer Furnace and two at Anniston will be ready. Other furnaces at Sheffield are also mentioned as being made ready. In the Birmingham District proper the Vanderbilt Furnace and two furnaces belonging to the Tennessee Coal, Iron and Railroad Company are mentioned as being kept in reserve to go into blast soon.

The following are the quotations given: No. 1 foundry, $12@$12.50; No. 2 foundry, $11.75@$12; No. 3 foundry, $11.50@$11.75; No. 4 foundry, $10.75@$11; gray forge, $10.50@$10.75; No. 1 soft, $12.50; No. 2 soft, $12. Charcoal iron is selling right along, though the amount manufactured in this State is not so very great. Quotations are as follows: No. 1 foundry, $16.50; No. 2 foundry, $16.

The report is that big bridge works will be established at Ensley in the vicinity of the steel plant. The new concern is now seeking a site.

The Republic Iron and Steel Company has taken hold of the properties of the Pioneer Mining and Manufacturing Company, and of the Birmingham and Gate City rolling mills. No changes in the operating forces have been announced as yet.

Chicago. May 24.

(From Our Special Correspondent.)

Pig Iron.—Business in both northern and southern pig iron is fair, even at the advance of 50c. per ton made by the Northern furnaces. A number of good sized contracts were closed and others are on the way to being closed. Business outlook is decidedly good, inquiry being large. Foundry iron continues in active demand and a steady increase is noted in this line. Never were the furnaces, both north and South, so crowded with work, and as prospects would have it, there will be a large shortage in iron if present conditions continue. Quotations on pig irons are as follows: Lake Superior charcoal, $17@$18; local coke, foundry No. 1, $16@$16.50; No. 2, $15.50@$16; No. 3, $15@$15.50; Local Scotch foundry No. 1, $16@$16.50; No. 2, $15.50@$16; No. 3, $15@$15.50; Southern coke No. 1, $16@$16.25; No. 2, $15.50@$16; No. 3, $15@$15.50; Southern No. 1 soft, $16@$16.50; No. 2 soft, $15.50@$16; Southern silveries, $15.50@$16; Jackson Co. silveries, $17@$18.50; malleable Bessemer, $15.50@$16; coke Bessemer, $15.50@$16.

Bar Iron.—The demand for bar iron continues good. Prices are: Common iron, $1.60@$1.70; for soft steel, $1.65@$1.75.

Structural Material.—Business is fair; the demand for bridge material for small railroad bridges being good. A few good sized contracts for both railroad bridge and building material have been let and others are about ready to be closed. Prices are as follows: Beams, 15 in. and below, $1.65@$1.70; 18 in. and above, $1.75@$1.80; tees, $1.70@$1.75; universal plates, $2.25@$2.30.

Cleveland, O. May 22.

(From Our Special Correspondent.)

Iron Ore.—A report just at hand shows less ore on Lake Erie docks on May 1st of the present year than on the corresponding date of 1898, the difference being 1,143,356 tons. The amount on May 1st is also smaller than for several years except 1896.

The trade in ores during the week, as it has been since the liberal transactions early in the season, consisted of the disposal of a few odd lots, some of which had lain on the docks for several years. Market prices are very firm and if the amount which is offered for sale were large enough to make it worth while, decidedly higher prices would, no doubt, be asked than are quoted at present. In the present sold up condition of the market there is little to encourage the asking of higher prices. The detention of boats at Buffalo on account of the strike has compelled ore shippers to take a moderate amount of wild tonnage to bring down ores from the upper lakes which would have been carried on contracts. In this condition carrying rates have advanced to 55c. per ton from Escanaba, to 70c. from the head of Lake Superior.

The quotations are as follows: Specular and magnetic ores, Bessemer quality, $4@$4.25; specular and magnetic ores, non-Bessemer, $3.25@$3.75; red hematite ores, Bessemer quality, $3.75@$4.25; red hematite ores, non-Bessemer quality, $2.75@$3.25.

Pig Iron.—The pig iron market was very active during the week. The demand has been good and liberal amounts were sold of nearly all kinds and grades. The sales were also made at higher prices than lately named in consequence of the strong demand. The quotations given below are much higher than last week, and the tendency of the market is towards still higher prices. The following are present quotations for iron f. o. b. Cleveland: Lake Superior Charcoal, $20; Bessemer, $17; No. 1 foundry, $16.75; No. 2 foundry, $16.50; No. 1 Ohio Scotch, $16.75; No. 2 Ohio Scotch, $16.50; Gray forge, $15.

Philadelphia. May 25.

(From Our Special Correspondent.)

Pig Iron.—An unsettled condition prevails in the pig iron market. The general belief is that business in June will assume large proportions, but after all the activity will be brief, because consumers have bought so far ahead. The conviction is well grounded that there will not be enough iron made this year to go around. The movements in Western markets are causing an unsettled feeling here. Then there is the possibility of an ore scarcity. Under these conditions, prices have moved up 25 to 50c., and quotations as given to-day are: No. 1 X foundry, $17@$17.50; No. 2 X foundry, $16@$16.50; plain, $15.75@$16; standard mill irons, $15.50@$15.75; basic iron, $15.75@$16; iron phosphorus, $19@$20.

Billets.—Billets under private wire advices today from Pittsburg have been quoted $30.50, but other reports say that some business is under way at $30. A great deal of material is being delivered East, and consumers are anxious to arrange for future requirements, but are between two fires.

Merchant Bars.—Leaving the combination movement in hand out of account, the actual trade condition is very favorable. While no car building orders are coming, there is a daily increase in small consumers, each of whom is anxious to contract for more than enough iron to see him safe on all the work he has on hand. Common iron has moved up fractionally and is 1.50c.; refined is 1.65c.; tested, 1.75c.; steel bars, 1.85@1.95c.

Skelp.—Buyers for skelp from Western points are seeking accommodations in the East.

Sheets.—No further developments. Less business was closed this week, but the consumption requirements are, if anything, larger. Price, 2.60@3.20c. The mill managers think that fall demands will submerge them.

Pipes and Tubes.—This week has been a busy one in tubes on account of the anxiety of manufacturers of steam capacity to know what tubes are going to cost.

Plate.—The turning down of work shows the condition of things. Prices have been advanced favorably, but published quotations are the same. Just now boiler plate and tank have the call, and it is no easy matter to keep things smooth among shop people. Some pressing work is hanging fire for want of plates. The mill people are making every effort they can to push and accommodate. Quarter-inch sold to-day at 2.40c.

Structural Material.—The amount of new business going to mills indicates that June demands are now coming in. There is a rumor this week that a general advance is to be made in shapes. Contracting engineers who have work under way are pressing for the acceptance of orders. Up to to-day there has been no change, but news from other centers points to higher prices.

Steel Rails.—The greater part of the business now going to mills is what are regarded as small orders. Buyers are expecting a readjustment of steel rail quotations with raw material, anyhow. Representatives say they have no cause of complaint with the amount of business they are sending in, and they think the demand for rail, light and standard, will increase.

Old Rails.—A great deal of business has been done in old rails this week without appearing in our local business. Quotations are $18@$19.

Scrap.—Urgent efforts are being made to procure steel scrap, but all sources of supply seem to be under engagement, and the odd lots picked up never get to the open market. The cleaned-out appearance of most of our big scrap yards tell this story. Prices are very firm, and quotations never meant less than now.

Pittsburg. May 24.

(From Our Special Correspondent.)

A short time since we asked the question whether it was not advisable to quit exporting pig iron and blooms to foreign ports and supply our own consumers, furnishing foreign countries with the manufactured product which woud, no doubt, bring the exporter more money as well as keep the plants in this country in operation. It is now very evident that something must be done to keep the plants in operation. The pig iron market is in such an unsettled condition that sales show a wide range in values; for example, last week the combination prices were $15.50@$16 for Valley Bessemer, the Pittsburg price being $16.65; in our report will be found sales of Valley Bessemer, 1,500 tons, June, July, $16.75, and sales of 2,500 tons Pittsburg, $17@$17.50, being the highest prices reached for years. When the advance in prices are going to stop may be asked; at this time it looks as if it would be some time before a correct answer could be furnished.

Pig Iron.—The stock of Iron in the Valleys and in the Pittsburg District has been estimated at 60,000 tons, indicating a heavy decrease since May 1st. In six months' time the increase in production of pig iron has only been about half a million tons, while, in the same time, the decrease in stocks is nearly 350,000 tons—that is to say, we have taken the 500,000 tons and 350,000 in addition. The most serious part of it is that the total stocks on furnace banks is now only 280,000 tons, practically one week's supply, a margin so narrow as to make the situation precarious. There is 86,000 tons of warrant iron, but this cannot count for such, as this may be held on speculation.

Finished Material.—There is not much change in prices, but the feeling is very strong, and it looks as though higher prices would rule in the near future. Some of the plate mills are quoting a slight advance, while others are not quoting at all on large lots, as they are full up with

orders and are really not desirous of taking business, even at full prices.

Wire Nails.—The market has undergone no particular change; prices are still quoted at $2.20 for car lots, but an advance is said not to be far off; the plants are running full.

Muck Bar.—The supply on the market is light; prices have further advanced, with sales at $28 delivered.

Wrought Iron and Steel Pipe.—The mills are all employed to their full capacity, being all sold away ahead; prices are firm, but unchanged.

Ferro Manganese.—Market is firm, with a light demand, 80 per cent. still selling in a small way, $75@$80 delivered.

Latest.—The iron and steel market remains in a very unsatisfactory condition, with products extremely scarce. The Valley furnace-men's meeting at Cleveland on Tuesday advanced prices of Bessemer at the furnace to $17. Bessemer at Pittsburg is $17.65, the highest point touched for years. The general opinions are that prices will reach $20 before long. Billets are very scarce and prices irregular; the sales include 1,000 tons at $28.50; June delivery mill iron is firm with sales $15@$15.50; supply on the market light. Foundry irons are very firm and tending upward

COKE SMELTED LAKE AND NATIVE ORE.

Tons.	Cash.
15 0.0 B., M., J., V.	$16.00
10,000 B., J., A., V.	16 00
10,000 M. I., J. to D., V.	14.35
4 000 Mill Iron, p., P.	15.40
3,000 M. I., J., J., V.	14.65
2,000 W. I., J., J., P.	14.25
2,000 B., J., J., P.	17.00
1,500 B., J., J., P.	16.75
1,500 M. I., p., P.	15.00
1,000 B., J. to D., V.	16.50
1,000 M. I., J., J., P.	14.75
1,000 B., J., J., P.	16.65
800 M. & W., J., P.	14.65
500 B., J., J., V.	15.50
500 B., J., J., V.	16.00
500 Bessemer, J., P.	17.50
500 B., J., A., V.	16.00
500 B., J., J., P.	16.65
500 No. 2 F'dry, P.	16.25
300 No. 1 F'dry, P.	17.00
300 No. 3 F'dry, P.	15.75
200 No. 2 F'dry, P.	16.75
100 Bessemer, J., P.	16.65
100 No. 1 F'dry, P.	17.75
100 No. 1 F'dry, P.	17.75

BLOOMS, BILLETS, SLABS.

1 500 Billets, J. to D., P.	$28.50
1 000 B., J., A., S., P.	28.00
1,000 Billets, J., J., P.	27.50
1,000 Billets, J., P.	28.50
500 Billets, J., J., P.	27.75

MUCK BAR.

500 Neutral, P.	$28.00

BASIC IRON.

Tons	Cash.
3,000 J., J., P.	$16.00

CHARCOAL.

200 Cold Blast, P.	$22.00
200 Warm Blast, P.	18.00
200 Warm Blast, P.	17.25
200 No. 6 W. B., P.	19.50
50 No. 2 F'dry, P.	17.50
50 Cold Blast, P.	22.50

OLD IRON AND STEEL RAILS.

2,000 Relaying S. R., gr., 56 lbs. to the yd. P.	$19.00
1,200 Steel Rails, gr., P.	14.00
1,000 Iron Rails, gr., P.	20.50
500 Iron Rails, gr., P.	20.00
200 Steel Rails gr., P.	14.00

SCRAP MATERIAL.

800 M. S., gr., P.	$14.00
500 Heavy Cast, n., P.	13 00
400 No 1, W. S., n., P.	16.00
300 Bush. Scrap, gr., P	13.00
300 Cast Scrap, gr. P.	13.00
200 Steel Scrap, net, P.	14.00
200 M. S., gr., P.	14.50
200 Cast Borings, gr., P	9.00
200 W't T'gs, gr., P.	11.00
150 O. C. W., gr., P.	16.00
100 Cast B'gs., n., P.	9.50
100 Store B'gs. n., P.	10.00
100 Car Wheels, gr. P.	16.50
50 R. R. G. B., gr., P.	9.50

New York. May 26.

The iron market continues generally active and strong. Foreign orders continue to go to other countries on account of present prices, but we note recent shipments of 20 locomotives for British railroads; an order for 10,000 ft. of wrought iron pipe from Argentina, besides a good sized order for sugar machinery; and some good shipments of machine tools to England and Germany.

Pig Iron.—The market continues firm and strong with no particular change in prices. We quote Northern brands, tide-water delivery, No. 1 X foundry, $16.75; No. 2 X foundry, $16; No. 2 plain, $15.75; gray forge, $15.50; Southern brands, New York delivery: No. 1 foundry, $16.25; No. 2 foundry, $15.75; No. 1 soft, $15.50; No. 2 soft, $15.25; No. 3, $14.75; basic, $15.

Bar Iron.—The demand is good. Prices have advanced again and the market is strong, with refined iron 1.80c. in large lots on dock and common 1.70c.

Plate.—The local demand is fairly good. Large lots at tidewater are: Tank, ¼-in. and heavier, 2.45c.; tank, 3/16 in., 2.55c.; shell, 2.55c.; flange, 2.65c.; marine, 2.75c.; fire box, 2.85c. The market is very strong, with prices advancing.

Steel Rails and Rail Fastenings.—Prices still are about $27 for standard sections f. o. b. mills, with transactions limited to small orders. Small rails are quoted: 12-lb., $34; 16-lb., $32; 20-lb., $32; 30-lb., $30; 40-lb. to standard, $28, with the usual advance for small orders. Angle bars are 1.35c.; spikes, 1.75c., and bolts, 2.15c.

Structural Material.—The market continues very firm. Architects have drawn plans for a large amount of structural work on which nothing will be done this year on account of the high price of material. We continue to quote for large lots at tide-water: Beams, 15-in., 1.70c.; tees, 1.70c.; channels, 1.70c.; angles, 1.57c.

Wrought Iron Pipe.—The demand for pipe is very good and quotations are advancing. The present discount for large lots is 60% and two 10's with every chance of being 60% in June.

Nails.—The demand for both cut and wire nails is good. Quotations continue firm at $2.35 for wire nails and $1.95 for cut nails in large lots on dock.

METAL MARKET.

NEW YORK, May 26, 1899.

Gold and Silver.

Gold and Silver Exports and Imports
At all United States ports in April and year.

	April.		Year.	
	1898.	1899.	1898.	1899.
GOLD.				
Exports	$1,323,724	$1,162,484	$5,741,506	$4,927,672
Imports	32,579,858	2,472,123	75,944,273	16 874,684
Excess	I. $31,256,134	I. $1,309,639	I. $70,202,767	I. $11,947,012
SILVER.				
Exports	4,099,161	4,082,567	16,256,915	19,290,270
Imports	2,091,066	1,849,231	9,289,757	8,993,835
Excess	E. $2,008,095	E. $2,233 336	E. $6,967.158	E. $10.296,435

This statement includes the exports and imports at all United States ports, the figures being furnished by the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending May 25th, 1899, and for years from January 1st, 1899, 1898, 1897, 1896.

Period	Gold. Exports.	Gold. Imports.	Silver. Exports.	Silver. Imports.	Total Excess, Exp. or Imp.
We'k	$750,984	$314,073	$538,055	$88,878	E. $886,088
1899..	2,901,208	6,228,272	10,776,446	1,232,117	E. 6,217,355
1898..	4,436,939	68,991,194	13,874,693	1,737,961	I. 52,327,528
1897..	10,021 817	1,513,021	16,750,661	1,072,693	E. 24,185,792
1896..	20,452,216	16,871,908	15,478,221	855,541	E. 24,202.908

Exports of gold were chiefly to the West Indies; of silver to London. The gold imported was from various sources; the silver from Mexico and South America.

The United States Assay Office in New York reports the total receipts of silver at 96,000 oz. for the week.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ .49	$ 51
Peruvian soles and Chilean pesos	.43½	.46
Victoria sovereigns	4.85	4.87
Twenty francs	3.85	3.88
Twenty marks	4.74	4 77
Spanish 25 pesetas	4.78	4.84

Average Prices of Silver per oz. Troy.

Month.	1899. Lond'n Pence.	1899. N. Y. Cents.	1898. Lond'n Pence.	1898. N. Y. Cents.	1897. Lond'n Pence.	1897. N. Y. Cents.
January	27.42	59.36	26.29	56.77	29.74	64.79
February	27.44	59.42	25.89	56.07	29.68	64.67
March	27.48	59.64	25.47	54.90	28.96	63 06
April	27 65	60.10	25 95	56.02	28.36	61.85
May	.....	.....	26 31	56.98	27.86	60.42
June	.....	.....	27.09	58.61	27.58	60.10
July	.....	.....	27.32	59.06	27.36	59.61
August	.....	.....	27.48	59.54	24.93	54.19
September	.....	.....	28.05	60.68	25 66	55.74
October	.....	.....	27.90	60.42	26 77	57.57
November	.....	.....	27.93	60.60	26 87	57.93
December	.....	.....	27.45	59.42	26.83	58.01
Year	.....	.....	26.76	58 26	27.55	59.79

The New York prices are per fine ounce; the London quotation is per standard ounce, 925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER. 1899.	COPPER. 1898.	TIN. 1899.	TIN. 1898.	LEAD. 1899.	LEAD. 1898.	SPELTER. 1899.	SPELTER. 1898.
Jan	14.75	10.99	22.48	13.87	4.18	3.65	5.34	3.96
Feb	18 00	11.28	24 20	14 08	4.49	3.71	6.28	4.04
March	17.54	11.98	23.82	14 38	4.37	3 72	6.31	4.25
April	18.43	12.14	24.98	14.60	4.31	3.63	6.67	4.26
May	.....	12 09	.....	14.52	.....	3.64	.....	4.27
June	.....	11 89	.....	15 22	.....	3.82	.....	4.77
July	.....	11 63	.....	15 60	.....	3.95	.....	4.66
August	.....	11 89	.....	16.23	.....	4.00	.....	4.58
Sept	.....	12.31	.....	16.03	.....	3.99	.....	4.67
October	.....	12.41	.....	17 42	.....	3 78	.....	4.98
Nov	.....	12 86	.....	18.20	.....	3.70	.....	5.29
Dec	.....	12.93	.....	18.30	.....	3.76	.....	5.10
Year	.....	12 03	.....	15 70	.....	3.78	.....	4 57

The price given in the table is for Lake Copper. The average price of electrolytic copper in January was 14.26c.; in February it was 17.02c.; in March, 16.35c.; in April, 17.12c.

Financial Notes of the Week.

The speculative markets continue uneasy, and prices of the numerous industrial stocks are low and unsettled. This depression has not affected general business, however, and trade is in a good condition. The demand for industrial products of all kinds continues very large, and manufacturers are busy, on a rising scale of prices.

The demand for silver has been moderately good, but no new features have presented themselves. The East has been a moderate buyer since the market declined to 28d. or 28½d.

Imports of specie at San Francisco by water for April were $1,033,284 in gold and $131,614 in

Imports and Exports of Metals

Port.	Week, May 24 Expts	Week, May 24 Impts.	Year, 1899. Expts.	Year, 1899. Impts.
*New York.				
Aluminum ..... long tons	.....	.....	239	10
Antimony ore	.....	145	.....	603
" regulus	.....	.....	.....	449
" oxide	.....	.....	.....	11
Brass	.....	.....	14	.....
Chrome ore	.....	.....	.....	636
Copper, fine	1,143	646	20,232	1,402
" matte, ore	.....	.....	540	433
" ash	20	110	20	109
" sulphate	47	.....	10,032	.....
" other	.....	.....	.....	30
Ferro-manganese	.....	.....	.....	51
Iron ore	.....	.....	5	50
" pig, bar, rod	90	.....	2,523	585
" pipe	314	.....	13,671	.....
" plates, sheets	.....	.....	251	.....
" other	15	.....	932	.....
Lead	1,073	1,686	23,051	21,139
" ore	.....	.....	.....	.....
Manganese, ore	.....	.....	.....	2.133
Metals, old scrap	6	141	2,339	996
" Composition	278	.....	3,503	.....
Nails	191	.....	7,92	.....
Nickel	33	.....	812	35
" Ore	.....	1342	.....	3,845
§Railr'd material	4	175	5,159	1,578
Rails, old	1,659	.....	9,091	.....
Spiegeleisen	.....	.....	.....	212
Steel bars, plates	1,804	1551	25,497	6,795
" rails	359	135	27,938	155
" hoops	.....	.....	446	.....
" wire	779	.....	14,526	34
" not speci'd.	38	142	5,336	1,078
Tin	.....	760	.....	12,630
" dross or ashes	.....	.....	60	.....
" and black plates	.....	11,269	.....	13,913
Zinc	.....	50	265	198
" dross	15	.....	500	.....
" ashes, skim	4	.....	1,135	75
" ore	.....	.....	.....	.....
" oxide	60	.....	1,810	229
†Baltimore.				
Alumina ..... bags	.....	.....	.....	3,479
Antimony regulus...casks	.....	34	.....	76
Chrome ore ..... long tons	.....	.....	.....	.....
Copper, fine	1,025	.....	15,619	.....
" matte	.....	.....	.....	.....
" sulphate	20	.....	1,251	.....
" pipe	.....	.....	100	.....
Ferro-manganese	.....	173	.....	1,457
Ferro-silicon	.....	.....	184	.....
Iron pig, bar, etc.	761	.....	783	3,258
" ore	.....	3,838	.....	37,541
" pipe	10	.....	1,628	.....
" pyrites	.....	.....	.....	21,316
" other	.....	.....	637	15
Lead	.....	.....	.....	.....
Manganese ore	.....	.....	.....	18,790
Metals, scrap	35	.....	4,167	14
Nails	.....	.....	319	.....
Spiegeleisen	.....	.....	.....	843
Steel, bars, pl'es	.....	.....	18,976	55
" wire	.....	20	446	295
" rails	3,745	.....	22,391	.....
" pipe	.....	.....	573	.....
" not specified	35	4	1,713	4
Tin	.....	.....	.....	512
" dross	.....	.....	.....	.....
" and blackplates	.....	103	.....	721
Zinc	.....	.....	18	.....
" dross	.....	.....	152	.....
" skimmings	.....	.....	131	.....
" oxide	.....	.....	.....	1
*Philadelphia.				
Antimony ..... long tons	.....	15	.....	5
Chrome ore	.....	.....	.....	320
Copper ore	.....	.....	.....	17,239
Ferro-manganese	.....	.....	.....	617
Iron, pig	.....	.....	.....	150
" ore	.....	.....	.....	49,337
" pyrites	.....	.....	.....	.....
Manganese ore	.....	.....	.....	.....
Spiegeleisen	.....	1960	.....	24,653
Steel	.....	.....	.....	1,034
Tin	.....	.....	.....	.....
" and black plates	.....	30	.....	525
Zinc dust	.....	.....	.....	252
" ore	.....	.....	.....	10
	.....	.....	3,093	.....
*Galveston.				
Lead ..... long tons	.....	.....	725	.....
Zinc	.....	.....	1,900	.....
" ore	.....	.....	118	.....
*Boston.				
Tin ..... long tons	.....	.....	.....	425
*Newport News.				
Copper ..... long tons	.....	.....	2,859	.....
*Norfolk, Va.				
Copper, fine ..... long tons	.....	.....	1,182	.....
Iron, pig	2,000	.....	18,094	.....
" pipe	.....	.....	410	.....
Steel, bars, billets	.....	.....	3 886	.....
" not specified	.....	.....	477	.....
*New Orleans, La.				
Copper, fine long tons	.....	.....	1,370	.....
" matte	.....	.....	1,271	.....
Zinc	.....	.....	2,057	.....
" ore	.....	.....	345	.....
*San Francisco, Cal.				
Tin long tons	.....	.....	.....	351

*New York Metal Exchange returns. †By our Special Correspondent. §Not specified. ‡Week ending May 19th.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1¼c a lb. on lead in ores; 2½c per lb. on pigs, bars etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. in pigs and bars; 2c. on sheets, etc. Copper, tin and platinum are free of duty.

silver. For the four months ending April 30th the totals were:

	Gold.	Silver	Total.
Coin	$7,181,337	$127,380	$7,308,717
Bullion	278,566	528,124	806,690
Totals	$7,459,903	$655,504	$8,115,407
Total, 1898			$9,075,488

The imports were from: China, $209,880; Japan, $259,025; Australia, $6,597,503; Central America, $120,344; Mexico, $836,564; British Columbia, $94,670; Honolulu, $55,416.

The statement of the United States Treasury on Thursday, May 24th, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date of last week:

	May 17.	May 24.	Changes.
Gold	$230,881,953	$242,072,774	I. $11,190,821
Silver	4,886,507	4,630,555	D. 255,952
Legal tenders	13,097,160	13,686,462	I. 588,302
Treas. notes, etc.	880,538	867,833	D. 12,705
Totals	$249,746,158	$261,257,624	I. $11,510,466

Treasury deposits with national banks amounted to $87,453,609, an increase of $3,936,622 during the week.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending May 20th, gives the following totals, comparison being made with the corresponding weeks in 1898 and 1897:

	1897.	1898.	1899.
Loans and discounts	$504,952,300	$581,525,000	$763,502,200
Deposits	272,131,400	680,987,800	902,325,900
Circulation	14,405,800	14,744,000	13,801,300
Reserve:			
Specie	100,736,300	169,402,800	203,183,600
Legal tenders	88,295,500	51,559,400	57,029,400
Total reserve	$189,031,800	$220,962,200	$260,213,000
Legal requirements	143,032,850	170,246,950	225,581,475
Balance, surplus	$45,998,950	$50,715,250	$34,631,525

Changes for the week this year were increases of $763,600 in deposits, $6,539,300 in specie, $1,145,500 in legal tenders, and $7,493,900 in surplus reserve; decreases of $7,243,900 in loans and discounts, and $26,200 in circulation.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

	1898.		1899.	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Assn.	$169,402,800	.....	$203,183,600	.....
England	180,453,825	.....	151,009,930	.....
France	373,451,405	$245,052,830	366,664,475	$242,215,850
Germany	145,760,000	75,085,000	148,455,000	76,475,000
Aus.-Hun	175,850,000	62,730,000	180,120,000	63,030,000
Spain	49,170,000	24,380,000	58,275,000	63,445,000
Neth'nds	14,285,000	34,580,000	19,165,000	33,845,000
Italy	76,270,000	9,275,000	77,095,000	12,715,000
Russia	556,615,000	22,440,000	474,580,000	23,815,000

The returns for the Associated Banks of New York are of date May 20th, and the others are of date May 18th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

Shipments of silver from London to the East for the week ending May 11th, 1899, are reported by Messrs. Pixley & Abell's circular as follows:

	1898.	1899.	Changes.
India	£2,606,840	£1,543,300	D. £1,063,540
China	285,166	498,046	I. 212,880
The Straits	96,462	24,907	D. 71,555
Totals	£2,988,468	£2,066,253	D. £922,215

Arrivals for the week, this year, were £120,000 in bar silver from New York, and £28,000 from the West Indies; total, £148,000. Shipments were £22,708 in bar silver to Hong Kong, and £10,000 to Bombay (May 4th); total, £32,708.

Indian exchange continues steady, all the Council bills offered in London having been taken at 16d. per rupee. Some buying of silver for Indian account began recently, but it was checked by the rise in prices.

The foreign merchandise trade of England for the four months ending April 30th is given by the Board of Trade returns as follows:

	1898.	1899.
Imports	£159,307,623	£157,551,443
Exports	96,573,154	103,720,792
Excess, imports	£62,734,469	£53,830,651

The imports show a decrease of £1,756,180, or 1.1%, and the exports an increase of £7,107,138, or 7.5. The movement of gold and silver for the four months is given as below:

Gold:	Imports.	Exports.		Excess.
1899	£9,387,351	£8,457,377	Imp.	£929,974
1898	14,331,635	12,799,634	Imp.	1,532,001
Silver:				
1899	5,187,349	5,026,626	Imp.	160,723
1898	4,031,120	4,851,057	Exp.	819,928

Of the silver imported this year the United States furnished £3,086,305, or 59.3% of the total.

Other Metals.

Daily Prices of Metals in New York.

May.	Sterling Exchange	Silver. Fine oz. Cts.	Silver. London, P'nce	Copper. Lake, cts. ₱ lb.	Copper. Electrolytic, ₱ lb.	Copper. Lond'n standard £ ₱ ton.	Tin, cts. ₱ lb.	Lead, cts. ₱ lb.	Spelter, cts. ₱ lb.
20	4.87¼	60⅞	28	18	17	.....	25¾	4.40	6.90
22	4.87½	61⅛	....	@18¼	@17¼	.....	25¾	@4.45	6.90
23	4.87½	61¼	28⅛	18⅛	17	78 0 0	25⅞	4.40	6.80
24	4.87½	61¼	28⅛	18	@17¼	77 15 0	25¾	@4.45	@6.85
25	4.87¾	61⅛	28⅛	18	17	77 5 0	25⅝	4.40	6.80
26	4.87¾	61	28⅛	18	@17⅛	77 0 0	25⅝	@4.45	6.75

The quotations given for electrolytic copper are for cakes, ingots and wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market has been extremely quiet. Manufacturers continue to be very busy, but are not inclined, at least not at present, to anticipate their wants, preferring to await developments. Although producers, generally speaking, have not shown any great anxiety to make further sales, there is a disposition on the part of some of them to do so, and the result has been that values have receded somewhat, and especially must that be said of Lake copper. On account of the extremely high prices which Lake has commanded during the last few months, as compared with other kinds, there has been no demand for it from Europe, where manufacturers are in the habit of substituting other sorts when Lake cannot be obtained at from ⅛@¼c. above electrolytic. The result of this has been that while a few weeks ago Lake was very scarce, the supplies are now becoming adequate to the demand and we understand 18⅛c., which was the asking price we recorded last week, has been shaded considerably, rumor having it that business has been done at 18c. We quote Lake, 18c.@18⅛c.; electrolytic in cakes, bars or ingots, 17c.@17¼c.; cathodes, 16¾c.@17c., and casting copper, 17c.

In London the market opened on Tuesday at £78, from which it declined gradually to £77 5s. Forward delivery, however, has suffered a more severe reaction, the price at one time being as low as £75 5s., or £2 10s. below the price for spot, but this discount has since been reduced to 12s. 6d., the closing price to-day being £77 for spot, £76 7s. 6d. for three months.

Refined and manufactured sorts we quote: English tough, £79@£79 10s.; best selected, £79 10s.@£80 10s. strong sheets, £85 10s.; India sheets, £84; yellow metal, 7d.

Exports of copper from Japan in the year 1898 are reported by the customs bureau at 27,432,887 catties (35,937,082 lbs.). This compares with 23,224,992 catties (30,424,740 lbs.) in 1897; showing an increase of 4,207,895 catties, or 18.1%, last year.

Imports of copper into Great Britain for the four months ending April 30th were 21,635 long tons ore (14,976 in 1898); 24,689 tons matte and precipitate (27,466 tons in 1898); 21,329 tons fine copper (21,401 tons in 1898). The whole was equivalent to 35,838 long tons of fine copper, against 36,632 tons in 1898; a decrease of 794 tons, or 2.2% this year.

Tin.—The week opened very firm, with an advance of about ¼c., but prices have since regained their former level, closing to-day at 25⅝c.

The London market opened at £118, at an advance of nearly £1 as compared with the closing price on Friday, but has since then declined to about £117 10s., which is the closing price for spot, and £118 5s. for three months.

Lead.—The market is quiet at 4.40@4.45c. at New York.

The foreign market appears to be barely steady at £14 2s. 6d. for Spanish and £14 5s for English lead.

Imports of lead into Great Britain for the four months ending April 30th were: Spain, 35,014 long tons; Australasia, 25,237 tons; United States, 9,939 tons; other countries, 3,601 tons; total, 73,791 tons, against 59,947 tons in 1898, showing an increase of 13,844 tons, or 23.1% this year.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: The lead market is firm but quiet. The nominal value of metal is 4.30@4.32½ and 4.35c., according to brands and deliveries. Offerings are not large by any means; nor does there seem to be any urgent demand, and only spot deliveries are wanted.

Spelter.—As soon as it became known that the coal strike had not assumed the proportions which it was feared it might, the market became somewhat easier and must to-day be quoted at 6.75@6.85c. at New York and 6.50@6.60c. at St. Louis.

The foreign market is unchanged at £28 10s. for ordinary brands and £28 15s. for specials.

Imports of spelter (metallic zinc) into Great Britain for the four months ending April 30th, were 24,647 long tons, against 26,581 tons in 1898; a decrease of 1,934 tons, or 7.2%, this year.

Antimony is unchanged; Cookson's, 10½c.; Hallett's, U. S. Star C and Hungarian, 10c.

Nickel continues on unchanged lines, and no alteration in prices can be reported. We quote for ton lots, 33@36c. per lb., and for smaller orders 35½@38c. London prices are 14@16d. per lb., acording to size and order.

Platinum.—Demand is active and prices continue high. For large lots $15.50 per ounce is now quoted in New York; for smaller orders, $16@$17. The London quotation is 62@64s. an ounce.

Quicksilver.—The New York quotation remains $42 per flask. The London price is unchanged at £8 2s. 6d. per flask, with the same figure quoted from second hands.

Imports of quicksilver into Great Britain for the four months ending April 30th, were 2,028,946 lbs. (2,835,806 lbs. in 1898). Exports were 714,770 lbs. (735,178 lbs. in 1898); showing 1,314,176 lbs. consumed or added to stocks this year, against 2,100,628 lbs. last year.

The Minor Metals.—Quotations are given below for New York delivery:

Aluminum.	Per lb.		Per lb
No. 1, 99% ingots	.35@37c.	Bismuth	$1.45@$1.50
No. 2, 90% ingots	.31@34c.	Magnesium	$2.75@$3
Rolled sheets	.38c. up	Phosphorus	.48@50c.
Alum.-bronze	.20@23c.	Tungsten	70c.
Nickel-alum.	.33@39c.	Ferro-tungsten, 60%	60c.

Variations in price depend chiefly on the size of the order.

LATE NEWS.

Mr. Frederick R. Tibbitts, of Boston, has gone to Joplin, Mo., to make a general inspection of the district, with a view to future possibilities.

The Tomboy Gold Mines Company, of Colorado, has declared a dividend of 40c. a share, payable May 31st, to stockholders of record on May 25th. The amount required to pay the dividend is $80,000.

An advance of 2c. in the price of Lima crude oil was made May 25th. An advance of 5c. a barrel has been made within the last 10 days. The advance makes North Lima 85c. and South Lima and Indiana 80c. a barrel.

In Pittsburg, Pa., the Pennsylvania Smelting Company has been organized by Frank N. Schwartz, ex-secretary of the Pennsylvania Lead Company; George Founce, general manager of that company, and others who were interested in the company before its absorption by the smelting combination. It is the intention to build a plant near Pittsburg to smelt the tin and dross from tin-plates, in that vicinity, and to refine tin and zinc.

The air power plant of the Metropolitan Street Railroad Company, which will furnish power to the crosstown lines on 28th and 29th streets, in New York, is now completed, and the new system will go into operation June 1st. This is the first practical installation of compressed air for street railroad service that has been established in the United States. The compressed air at 2,500 lbs. pressure is stored in tubes under the seats of the cars and operates the motor connected to the axles of the car. An Ingersoll-Sargeant cross-compound, high-pressure air compressor supplies the air for this purpose.

The organization of the National Tube Company was consummated in New York, May 25th, by the election of the following board of directors: Joshua Rhodes, J. J. Vandergrift, William B. Rhodes, F. J. Hearne, J. N. Vance, John Eaton, Francis L. Potts, F. R. Tobey, Jonathan Rowland, Daniel O'Day, A. S. Matheson, O. C. Barber, Henry Aird, John Don, Edmund C. Converse, Horace Crosby, William Nelson Cromwell, D. W. Hitchcock, A. F. Luke, and W. J. Curtis. These officers were elected: President, E. C. Converse; chairman of the board, Joshua Rhodes; first vice-president, F. J. Hearne; second vice-president, Horace Crosby; third vice-president, Francis L. Potts; general manager, A. S. Matheson. The treasurer has not yet been elected, but the place has been offered to A. F. Luke, of Boston. The capitalization of the company ($80,000,000) was fixed upon the basis of the appraisement of the thirteen properties absorbed. Half the total amount will be in 7% cumulative preferred stock, and the other half in common stock. J. P. Morgan & Company will finance the company, which will have its main offices in New York, and manufacturing headquarters at Pittsburg.

This company is the combination of the pipe and tube makers; it will include 13 companies, as follows: National Tube Works Company, Riverside Iron Works, Pennsylvania Tube Company, American Tube & Iron Company, National Galvanizing Company, Chester Tube & Iron Company, Oil City Tube Company, Cohoes Tube Works, Syracuse Tube Company, Allis Manufacturing Company (tube mill), Morris Tasker & Company (Delaware Iron Company), Ohio Tube Company, Oil Well Supply Company (Continental Tube Works).

MINING STOCKS.

Complete quotations will be found on pages 638, 639 and 640 of mining stocks listed and dealt in at:

Baltimore.	New York	Mexico.
Boston.	Philadelphia.	Paris.
Butte.	St. Louis.	Rossland.
Cleveland.	Salt Lake.	Shanghai.
Colo. Springs.	San Francisco.	Toronto.
Denver.	London.	Valparaiso.
Spokane.		

New York. May 26.

The market has declined, though at the close a recovery in prices is noticeable. Anaconda copper on European selling receded to $58½ on Wednesday, and Amalgamated Copper on the curb fluctuated between par and $101⅞, sales being made up to $101⅝. American Smelting and Refining common sold at $39@$43, and preferred at $82@$85¼. Tennessee Copper was featureless on the curb at $21@$23½, while British Columbia Copper sold up to $14. Flemington Coal and Coke of West Virginia touched $27, but business was limited. Markeen Copper, of Arizona, was quoted at $9@$9⅝. The Boston and British Columbia Copper Mining and Smelting Company, $10 par value shares, were sold by the fiscal agents here at $2.50 on 5,000 shares. The Anita Mining Company, of New York, with copper property in Bolanos, State of Jalisco, Mexico, has sold a block of its stock of $1 par value at 12½@25c., and is now offering 100,000 shares at 40c. each. The company is capitalized at $500,000. The Colorado and California stocks were pretty steady. The higher priced Comstocks made advances. Consolidated California & Virginia rose from $1.30 to $1.75, and Ophir from $1 to $1.20.

Homestake of South Dakota opened firm at $60, and closed at $59.50.

Auction sales were $17,000 Ohio Mining and Manufacturing Company first mortgage 5% bonds, and $600 bonds scrip at 25½; 200 shares Veta Madre Milling and Reduction Company at

Boston, May 25.

(From Our Special Correspondent.)

The market has been somewhat irregular and uncertain one, though prices have generally been good, and copper shares have not suffered much. Buying has been more speculative and professional than for investment. In fact, the investing capacity of the market has been pretty well tested.

We have a little rest now from copper consolidation rumors and from Mr. Lawson; though there is no telling when both inflictions may break out again.

Calumet & Hecla ranges about $835; Montana between $365 and $370; Tamarack, $230; Osceola, $87; Parrot, $62½. Amalgamated Copper has been a little weaker, selling at $100. Of the speculatives, Butte & Boston is $91; Arcadian, $57; Isle Royale, $55; Copper Range, $48.

The gold stocks have been in fair demand, with Santa Isabel at $14½; Cochiti higher again at $13½; and the others showing little change. Nothing doing in the quicksilver stocks. The reports of Napa and its allied companies are out this week and make a very good showing.

The allotments of the Helvetia Copper Mining Company are made, the subscription about covering. The company has 200,000 shares and the issue price is $10.

Two new Michigan companies are the Tomahawk, one of the Fay group; and the Arctic, which is a Detroit concern chiefly, with land near the Mass, Michigan, Victoria and Adventure. Th capital of each will be 100,000 shares, $25 each, and stock will be offered in Boston.

The Boston Stock Exchange has listed the shares of the Melones Gold Mining Company. The company has a capital of 200,000 shares, par $10. The property is located on Carson Hill, Calaveras County, Cal. Of the stock 100,000 shares were offered for subscription last February at $5 per share. The property was purchased for $182,500 cash and 13,250 shares of stock; 53,820 shares were sold two years ago for $120,000 for development work. This left a balance in the treasury in February last of 32,930 shares. The directors of the company are as follows: W. E. C. Eustis, C. Minot Weld, Geo. H. Morrill, Jr., James Parker, J. C. Whitney, C. N. Felton and W. C. Ralston.

Salt Lake City. May 20.

(From Our Special Correspondent.)

A dull, heavy market ruled throughout the week. The volume of business dropped 50%; prices softened and trading was mostly professional. There were a few strong spots, which include most of the dividend payers.

Chloride Point closed 80c. bid, 82c. asked. Geyser-Marion is higher and firmer, attributable to the end of title indebtedness. Mercur is showing strength. Omaha responds somewhat to the depression. Sacramento is fairly firm. Alax weakened a point or two, but recovered above $1.50. Bullion Beck and Centennial Eureka remained firm. Eagle & Blue Bell softened under $1.50. Emerald spurted for a day, then settled back. Star Consolidated is under $1. Sunbeam presents no change. Swansea and South Swansea are strong and the latter scores an advance. Tetro is up 2 points.

San Francisco. May 20.

(From Our Special Correspondent.)

We have had the usual market, with small inside dealings. The quotations have been rather lower this week, for no special reason.

The reports from the Comstock pumping continue favorable, but very little attention is paid to them, and the public declines to show any interest.

Consolidated California & Virginia sold down to $1.40. Ophir is quoted at $1.05; Sierra Nevada, 75c.; Best & Belcher, 49c.; Mexican, 42@43c.; Yellow Jacket, 35c.; Potosi, 25c.; Occidental, 27c.

The Comstock Pumping Association reports having had in its treasury on May 15th a surplus of $14,478, with all expenses paid to that date. The expenses for the past month amounted to $4,705. The balance remaining to be paid on the pumping contract for lowering the water the full 500 ft. or to about 2,250-ft. level is $15,000.

London. May 13.

(From Our Special Correspondent.)

There is great activity among the promoters and quite a number of new companies have been introduced to the public this week. The most interesting one is Stratton's Independence, Limited, which has been formed to acquire the Independence mine at Cripple Creek. I sent particulars of this impending flotation a few weeks ago, but was not able to give full details of the capital, purchase price, etc., as these were not settled then. It now appears that the capital is £1,100,000, of which £1,000,000 is paid in shares to the vendors and £100,000 is devoted to working capital. I understand that this working capital is already subscribed, so no shares are being offered to the public at present. In a short time, however, blocks of vendors' shares will make their appearance on the market, no doubt at a premium. It is some time since a really first-class mine in the United States has been introduced to the London public. This mine enjoys the unusual distinction of being reported on very fully and carefully by a first-class expert, for all will agree that Mr. T. A. Rickard deserves this title. His report in the present case is indeed a model one. There is always, however, the eternal question to be considered whether the capitalization is not greater than the mine can stand. There is gold in sight whose winning should return more than the capital of the company, but this is not enough in mining.

Another company advertised this week is the Cariboo Consolidated, Limited, which has been formed with a capital of £350,000 to acquire a miscellaneous collection of hydraulicking and derdging propositions in Cariboo and Lillooet, British Columbia. None of these properties appears to have been worked, but the prospects are said to be good. They have been reported on by Mr. E. P. Rathbone and Mr. William Thompson of London and by various local people. The company is promoted by Mr. John Girdwood, otherwise the Gold Lands Corporation, Limited. Mr. Girdwood has hitherto been connected chiefly with Australian companies, of which the Lady Shenton has turned out the best.

A third company is the Telford Yukon Mining Company, Limited, which is a Canadian corporation. The direction and management is in Toronto, but an English office has been opened in London, under the auspices of Mr. Frank Scrutton, a London stockbroker, to afford the promoters an opportunity of selling their shares here. Some time ago the promoters sent Mr. E. M. Telford, late of the Northwest mounted police, on a prospecting expedition in the Yukon District, and he has come back with 24 placer claims, chiefly on Beaver Creek. The directors of the company are Messrs. R. A. Pyne, G. W. Bedells, A. H. Greene, C. D. Wreyford of Toronto and Mr. Frank Scrutton of London. There is very little in the prospectus to go upon, for the reports of the discoverers are not confirmed by independent examination or opinions. Everything depends upon the Toronto and Klondyke management, for it is obvious that the London representation has little or no voice in the policy of the company.

New copper companies continue to make their appearance and this week we are treated to the Tablas-Finana Copper Company, Limited, a company which has been formed to acquire two groups of properties, one in the Tablas District of Grenada, and the other in the Finana District of Almeria in Spain. As far as can be gathered from the prospectus these properties have been worked before, but the difficulties of transport and scarcity of timber prevented any profit being made. Now, however, the opening of a new line of railway has made it possible to ship concentrates to England for treatment. No doubt also the rise in the price of copper has been calculated on in arriving at this decision to recommence work. The firm of John Carr & Co., metal and mineral merchants, of London and Newcastle, have been instrumental in resuscitating the property, and they have been assisted in organizing the company by some London promoters. I have no doubt that the scheme is conceived in good faith; but it is dangerous to go in for properties that did not pay to work under normal conditions.

Another gigantic Whitaker Wright company has been introduced to the public this week. Some months ago I mentioned that he intended to form the Standard Exploration Company, Limited, with the object of taking over a number of his unsuccessful West Australian mines. It appears, however, that neither the shareholders in the companies to be taken over nor the underwriters for the new company were enamored of the new scheme, and did not consider it attractive enough; so he determined to throw something else in as a bait to speculators. This bait is a perfectly glittering proposition, and no doubt will effect its object most completely. It is an option on the controlling interest in the Pande Basin gold deposits, on the island of Baranoff, 9 miles from Sitka, Alaska. These deposits belong to a syndicate headed by Mr. Muhlemann, of the United States Sub-Treasury in New York, and they have been reported on by Mr. Benjamin P. Moore and Mr. Henry Willey. These experts' reports are simply astounding, as they point to an extent of deposit of at least 30,000,000 tons, which average $119 to the ton. Mr. Whitaker Wright is more candid in this prospectus when speaking of this option than he was in the prospectus of the British America Corporation when speaking of the option on the Le Roi. He is careful to tell us that this is only an indefinite option on a controlling interest and that he does not intend to exercise it until his own engineers have examined the property. Whether anything comes of the option, or whether there is any truth in the reports of the extraordinary riches of the Pande Basin, the inclusion of the scheme in the prospectus will serve the purpose of floating the Standard Exploration Company. To come to details, the company has a capital of £1,500,000; of this amount £775,000 in shares is to be paid for the properties of the eight unsuccessful West Australian companies and 500,000 shares are now being offered for public subscription, while the remainder will be held in reserve for the present. These eight companies were floated publicly a few years ago by Mr. Whitaker Wright's promoting company, the West Australian Exploring and Finance Company. Of all the many West Australian companies floated by this latter, only the Lake View Consols has turned out a success, but the Ivanhoe, more recently promoted by his London & Globe Finance Corporation, is a good egg. Of course, now that the eight failures have been bought back and lumped together again, some more development work will be done, and the whole eight refloated under different circumstances. Mr. Whitaker Wright has now three great promoting companies, the London & Globe Finance Corporation, the British America Corporation and the Standard Exploration Company. These work together and control the Le Roi, Lake View Consols and Ivanhoe, all dividend payers, and quite a number of other subsidiary companies, which do not yet aspire to that fortunate condition. By far the most interesting thing about this flotation is of course the Pande Basin proposition, which, however it turns out, promises some little excitement for the market.

Paris. May 14.

(From Our Special Correspondent.)

Increased activity marks the mining stock market, and we are returning to the times when that department was the great center of interest on the Bourse.

The financial editor of the "Temps" gives what is evidently the version of the ex-chairman and deputy-chairman of the Societe des Metaux, on the misadventure of that company in its dealings in copper, which resulted in the retirement of several officers of the company. According to his statement, the company is the principal purchaser of the production of the Boleo Mines, of which it takes about two-thirds. The deliveries are irregular, and sometimes greater than the Metal Company requires for its consumption. In October last the stock on hand was large, and had absorbed a considerable portion of the working capital. As the price of copper was rising, the chairman and deputy-chairman decided on reducing the stock by selling 2,000 tons, which was done at prices up to 1,500 fr. per ton, but at an average rate of 1,375 fr. As the copper had cost only 1,000 fr., the company gained 750,000 fr. by the operation. The rumors of the formation of an American trust accentuated the rise, and the company preferred to postpone delivery of copper sold, paying a backwardation as in a sale of Exchange securities. Finally the copper had to be delivered at a moment when the difference between the average selling price and the market price represented a profit lost of 800,000 fr. The charge brought against the chairman and deputy-chairman was that they had acted without authority of the board. They were, in consequence, called on to resign. Their apologist in the "Temps" contends that it was impossible to call the Board together each time a deal in metals was concluded, and that they did not exceed their powers.

Azote.

STOCK QUOTATIONS.

NEW YORK.

Name of Company.	Location.	Par val.	May 19 H.	May 19 L.	May 20. H.	May 20. L.	May 22 H.	May 22 L.	May 23 H.	May 23 L.	May 24. H.	May 24. L.	May 25. H.	May 25. L.	Sales
Adams Con	Colo.	$10	.15	...	.15	...	.15	...	.17	...	.14	...	...	...	$300
Alamo	"	1	...	...	06	...	.07	...	.08	...	...	...	...	...	1,900
Alice	Mont.	5	1.00	...	1 15	...	1 15	...	1 10	1.00	1 00	.95	...	...	637
Alliance	Colo.	1	.10	...	.10	...	...	...	...	...	...	...	...	...	...
*Anaconda, c	Mont.	25	62.50	61.38	65 00	62.50	65.25	61.75	62 75	61.00	59 75	58.13	...	...	58,450
Anaconda Gold	Colo.	5	.49	...	.53	...	.52	....	.49	...	53½	...	.54	.53	201
Anchoria	"	1	...	...	...	...	.95	...	.95	...	.92½	...	1.00	.92	100
Argentum-Jun	"	2	.27	...	.28	...	.27	...	.28	...	.28	...	...	...	...
Belcher	Nev.	2	.33	...	.33	.32	.30	....	.34	.33	.34	.33	...	...	...
Best & Belcher	"	3	.45	...	.4	...	.47	.45	.49	.45	...	...	...	...	...
Breece	Colo.	25	1.6	...	1.40	1.25	1 40	1.25	1 60	1.25	1 60	1.25	...	...	...
Brunswick	Cal.	1	.23	.22	.24	...	.22	...	.22	...	.22	.20	...	...	...
Bullion	Nev.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Challar	Nev.	3	.28	...	.26	...	.28	...	.29	...	.28	.23	...	...	300
Chrysolite	Colo.	50	.11	...	.15	.11	.11	...	.11	.10	.11	.10	...	...	...
Comst'k T.,b'ds	Nev.	100	...	...	.05	...	...	...	...	...	...	...	...	...	...
do. stock	"	100	.05	...	.05	...	.05	...	.05	...	.05	...	...	...	500
do. scrip	"	100	.11	...	.0	...	.06	...	.10	...	.06	...	...	...	...
Con. Cal. & Va	"	2½	1.40	...	1 35	...	1.75	....	1.70	...	1.70	...	...	...	115
Con. Imperial	"	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Cr & Cr. Creek	Colo.	1	.09	...	.09	...	.10	...	.10	...	.11	...	...	...	2,100
Crescent	"	10	.15	...	.15	...	.15	...	.15	...	.09	...	...	...	...
Cripple Cr. Con	"	1	.09	...	.11	...	.09	...	.09	...	.09	...	.11	.10	1,000
Crown Point	Nev.	3	.3	...	.31	.24	.35	.28	.33	.27	.33	.24	...	...	...
Deadw'd Terra	S.Dak	2	.50	...	.50	...	.50	...	.50	...	.50	...	...	...	...
Elkton	Colo.	1	.92	...	.90	...	.90	...	.88	...	.85	...	.90	.85	200
El Paso	"	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Enterprise	"	1	.30	...	.20	....	.30	....	.30	...	.30	....	...	...	...
Father de Smet	...	...	.12	....	.14	...	.12	.11	.12	.10	.12	....	...	...	100
Findley	Dak.	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Garf Con	"	1	...	...	.14	...	.13	...	.1 1/2	...	.12¾	....	.13½	.12	200
Gold Coin C.Clk	"	1	...	...	...	...	1.90	...	1.90	...	...	...	...	...	...
Gold Coin Glip	"	5	.35	...	.35	...	.35	...	...	...	...	...	...	...	...
Golden Fleece	"	1	.28	...	.32	.34½	.31	...	.30½	.26	.33	...	.35	.3	1,100
Gould & Curry	Nev.	3	.30	...	.30	...	.30	.27	.3	.26	.30	.28	...	...	...
Gregory Gold	Colo.	1	...	...	.01	...	.01½	.02½	.02	.02	.02½	.02½	.02½	.02	142,900
Hale & Norcross	Nev.	3	.30	...	.30	.25	.30	.23	3	.25	3	.25	...	...	500
High Five	Colo.	1	.22	...	.23½	.22	.2	...	.22	...	.22½	...	.23	...	1,150
Homestake	S.Dak	100	60 00	...	60 00	...	60 00	...	60 0	...	59 00	...	...	...	...
Horn Silver	Utah.	25	1 5	...	1 5	...	1 5	1 5	1 5	1 5	1 5	....	...	...	...
Iron Silver	Colo.	20	.55	.50	.55	.50	.5	.50	.55	.50	.50	....	...	...	...
Isabella	"	1	.90	...	.89	...	.87	...	.89½	...	.86	....	.88	.84½	350
Jefferson	"	1	.06	...	.05	...	...	...	.05	...	...	...	.06½	...	...
Jennie Blanche	"	1	.48	.47	.48½	.48	...	...	.49	...	.49½	...	.5½	.49½	4,500
Justine	"	1	.02¾	...	.0	...	.02¾	...	.0	.02¾	.03½	...	.03¾	.02¾	12,000
King & Pemb	Ont.	10	.2	.15	.15	...	.20	.15	.2	.15	15	...	...	...	...
Leadville Con	Colo.	1	.10	...	.10	...	.10	...	.10	...	.10	.09	...	...	...
Little Chief	"	3	.2	.17	.20	.17	.2	.17	.20	.17	.20	.17	...	...	...
Mexican	Nev.	3	.50	...	.40	...	.47	.43	.49	...	.60	...	...	...	700
Mollie Gibson	Colo.	1	.2	...	.2	...	.28¾	.24	.25	...	.24	...	.29	.26	700
Moon Anchor	"	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Mt. Ross	"	1	.20	...	.2	.21	.25	...	.24½	...	25¼	.24	.27	...	300
Occidental	Nev.	3	.25	...	.22	...	.22	...	.2	...	...	...	...	...	...
Ontario	Utah	18	7.50	...	7.70	...	7.00	...	10 00	...	7.50	...	...	...	10
Ophir	Nev.	3	1.00	...	1.00	...	1 00	...	1.0	...	1.20	...	...	...	400
Pharmacist	Colo	1	.06	...	.0	...	.05	...	.0	...	.05	...	...	...	1,100
Phoenix	Ariz.	1	.0	...	.10	.09	.0	...	11	...	1	.09	...	...	200
Plymouth Con	Cal.	10	.15	...	.10	.09	10	.09	09	...	10	.09	...	...	...
Portland	Colo.	1	1 9	...	1.90	...	1.92	1.90	1.92	1.90	1 90	...	2 00	...	...
Potosi	Nev.	3	.2	...	.2	.22	.28	...	.28	...	.34	.25	...	...	700
Quicksilver	Cal.	100	2 00	...	2.00	...	2 0	...	2 25	...	...	...	...	...	...
do. pref	"	100	7 5	...	7.50	...	7 5	...	7 50	...	...	...	...	...	...
Rocky Mtn	Colo	1	.06	...	.22	...	...	...	.02¾	...	03	...	...	...	...
San Juan Star	"	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Savage	Nev.	2½	.20	...	.20	...	2	...	23	...	21	...	...	...	200
Sierra Nevada	"	3	.70	...	.72	.70	.70	...	75	...	81	...	...	...	500
Small Hopes	Colo.	20	1.0	...	1.25	...	1 50	...	1 50	...	1.25	...	...	...	...
Specimen	"	1	.06	...	.06	...	.08	...	.06	...	.06	...	...	...	...
Standard Con	Cal.	100	2 50	...	2 0	...	2.5	...	2 50	...	2.50	...	...	...	...
Syndicate	"	...	...	...	.01	...	...	...	...	...	...	...	...	...	500
Union	Colo.	1	.0	...	.21¾	...	.22½	.22½	22	...	.22½	...	.23	.22	500
Union Con	Nev.	2½	.33	...	.35	...	35	...	.33	...	.35	...	...	...	...
Union Gold	Colo.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Utah Con	"	5	.14	...	.14	...	.14	...	.14	...	.15	...	...	...	...
Vindicator	Colo	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Work	"	1	.21	...	.22	.21	.22	...	.20	...	.21	.22	...	...	1,800
Yellow Jacket	Nev.	5	.35	...	.35	...	.35	...	.38	...	.35	...	...	...	300

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.	.....	$100	43	43¾	44	41	41	40	40	40	39	41	....	....	5 939
" " " " pf	.....	100	85	...	85¾	84½	85	82	84½	82¾	82¾	83½	...	...	6,313
" " " "nbs	.....	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Am. S &W Co n	.....	100	67	63¾	64¾	63¾	65¾	62	64½	62¾	6 3/8	60½	61¾	...	52,863
" pfFr n	.....	10	97¾	...	97	94	97¼	97	96¾	96	97¼	95¾	95¾	...	2,420
Central of N. J.	N. J.	100	112¾	112	112	...	111	11 8/4	111	...	113¾	111	1 3/4	...	3,662
Col. Fuel & I.	Colo.	100	47¾	46¾	48¾	...	46¾	46	47¾	45¾	...	...	49¾	...	4,085
Col. & H.C.&I.	Ohio.	100	...	...	15¾	...	14¾	...	14¾	...	15	...	...	...	40
Del. & Hud	N. Y.	100	118	11 8/4	118	...	117¾	117	117	116¾	117½	116½	119¼	...	3 920
Federal Steel	.....	100	61¾	59¾	61¾	60¼	60¾	58½	60¾	58¾	59½	57¾	58¾	...	97 246
" " pf	.....	100	82¾	81	81¾	81¾	81¾	80¾	81½	80½	80¾	80½	8 3/4	...	114,46
National Lead	N. Y.	100	32	...	...	...	31¾	...	32	...	31	29½	31	...	1,345
" " pf	Md.	100	112¾	...	...	...	112¾	...	...	...	112¾	112	...	...	982
National Sa't	.....	100	52	50	51¾	50	51	49	51½	50	...	51	...	...	...
" " pf	.....	100	...	...	75	75	75	76	74	75	73	...	...	...	...
New Central C.	.....	...	39	37	38	37	39	37	39	37	39	37	...	...	...
N. Y., Ont. & W.	N. Y.	100	25½	25¼	25¾	25¼	25¾	24¾	25¾	24¾	25	24¾	25¼	...	7,110
Phila. & Read	Pa.	100	...	...	...	...	20	19¾	20	19¾	19¾	...	20	...	2,688
" " 1st pf.	"	100	55¾	55¼	55¾	55	55	53½	54¾	54¼	54½	53¾	55¾	...	21,870
*Standard Oil	"	100	476	475	476	475	476	475	472	470	467	465	...	...	...
Tenn.C.,L.&R.R.	Ala.	100	58½	57¾	58¾	58¼	58	56¾	57¾	56¼	57¾	56¼	57¼	...	29,820
" " pf	"	100	...	...	...	...	...	...	...	...	...	...	...	...	...

*Ex-Dividend

PHILADELPHIA PA.

Name of Company.	Location.	Par Val.	May 18. H.	May 18. L.	May 19. H.	May 19. L.	May 20. H.	May 20. L.	May 22. H.	May 22. L.	May 23. H.	May 23. L.	May 24. H.	May 24. L.	Sales
Bethlehem I	Pa.	$50	...	...	105	104¾	105	104¾	104¾	104½	103¾	103	104	...	595
Cambria Iron	"	50	...	...	45.00	44 00	...	...	44 75	...	45.00	...	...	...	135
*CambriaSteel	"	50	...	...	21.88	21 63	21 88	...	21 88	21.2	21 63	20.68	20 63	19 50	15,895
Choctaw, pref.	I. T.	50	...	...	45 50	...	...	...	...	...	...	...	45.25	44.75	62
Choc. Tr. ctf.	"	50	...	...	...	...	...	...	...	...	...	...	53.50	...	140
Lehigh Val.	Pa.	50	...	...	24 50	24 13	24 25	24.00	24 00	...	24 00	...	24.00	...	755
Penna. R. R.	"	50	...	...	64.63	64 25	64 25	...	63 85	63 70	64.13	64.00	64.63	63 50	1 933
Penna. Steel.	"	100	...	...	...	...	81.00	...	...	...	78.00	76.00	77.50	...	197
" pr'f	"	100	...	...	...	...	...	...	...	...	...	...	...	...	...
United Gas I	"	50	...	...	164	163	...	...	164	162	...	...	161	158	1,306
Welsb. of Can	Can.	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Welsb. Coal	"	100	...	...	...	...	...	...	...	...	...	...	...	...	...
" " pf	"	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Welsb Light	"	100	...	...	...	...	...	...	50	25	52.00	50.00	...	...	1,595

Total shares sold, 22,683.

BALTIMORE, MD.‡

May 25.

Name of Company.	Location.	Par value	Bid.	Ask	Name of Company.	Location.	Par value.	Bid.	Ask
Atlantic Coal	Md.	$10	...	...	Howard C.&C	Md.	$5	...	...
Big Vein Coal	"	10	...	...	Newburg Orrel C.	"	25	...	...
Consolidation Coal	"	100	55	57	Silver Valley	N. C.	5	...	...
George's Creek Coal	"	100	115	117¾					

ST. LOUIS, MO.

May 24.

Name of Company.	Location.	Par value.	Latest Bid.	Latest Ask.	Sales.	Name of Company.	Location.	Par value.	Latest Bid.	Latest Ask	Sales.
Am. Gold	Colo.	$10	...	...	...	Granite B.	Mont.	$10	$3 00	$3 60	1,700
Ana. Nettie	Colo.	10	$1.80	$2 00	1.0	Hope St. L.	Mont.	10	...	...	...
Central L	Mo.	100	...	...	...	St. Joe. L.	Mo.	10	14.50	15.50	...
Doe Run L.	Mo.	100	1.35	...	...	Sm. Hopes	Colo	20	1.30	...	...

BOSTON, MASS.†

Name of Company.	Par val.	No. of shares.	May 18. H.	May 18. L.	May 19. H.	May 19. L.	May 20. H.	May 20. L.	May 22. H.	May 22. L.	May 23. H.	May 23. L.	May 24. H.	May 24. L.	Sales
Aetna, cons. g.	$5	100,000	...	...	...	...	...	...	...	...	4.13	...	...	...	50
Advent'r'e,Cons	25	100 000	...	...	2 00	11 00	12 00	...	...	...	12 00	11 25	11.50	...	755
Allouez, c.	25	80,000	9 88	...	10 75	10 50	10.50	...	10.50	...	11.00	...	...	...	360
Am. Z., L. & S.	25	60,000	40 00	39.00	39.50	39 00	...	...	39 0	...	...	...	38 50	...	600
Anaconda	25	1,200,000	61 88	61 50	62.50	62 00	65.00	63.75	64.75	63.00	...	...	...	...	925
Arcadian, c.	25	100,000	61 0	59 25	60 00	...	...	...	60 00	...	59 00	58.00	...	...	1,120
Arnold, c.	25	60,000	14 88	14 00	14.75	14 00	14 50	13.88	14 00	13 75	13 50	12 00	12.50	11.75	1,955
Ashbed, c.	25	40,000	2.50	2.00	2.13	....	2 00	...	2.00	...	2.00	....	...	...	1,335
Atlantic, c.	25	40,000	33.00	...	33 00	...	33 00	...	...	...	...	32 50	32.50	32 00	350
Baltic, c.	25	100,000	31 25	29 00	31 25	30 50	31.00	30.00	31.00	29.50	32 00	31.00	...	...	1,212
Bingham, c.&g.	10	100,000	13 50	12 00	14.25	13.00	14.25	14.00	14 50	14.00	...	...	13 50	...	1,765
Bonanza, g.	10	300,000	4 00	3 88	3.88	...	...	...	3 88	....	4 00	3 88	4.00	3 88	1,895
Bost. & C. C	...	...	...	...	.37½	...	...	...	...	...	.25	...	...	...	3,750
Bos. & Mon.Tr. R	25	200,000	365	351	365	360	365	....	370	362½	370	368¾	365	364	1,745
Breece	25	150,000	...	...	...	...	...	...	...	...	...	...	...	...	...
BritishCol. Ltd	5	200,000	13 50	13.00	13.88	13 63	13 75	...	13.75	...	...	...	...	...	1,970
Butte & Bost., c	10	200,000	93 00	91 50	92.50	...	92 00	91.50	92 50	91 00	90 00	...	91 00	89 00	1,649
Cal. & Hecla, c.	25	200,000	857	835	...	...	...	...	849	...	835	....	835	...	85
Catalpa, s.	10	100,000	...	...	...	...	...	...	...	...	...	...	...	...	...
Centennial, c.	25	80,000	42 00	40 75	41 00	...	41 00	...	42 13	41.00	41 00	38.50	38 50	36 50	6 825
Cochiti, g	10	90,000	15.00	14.38	14 75	14.00	15 0	14 5	14 75	14 00	14 13	14 0	13 75	13 50	2,145
Copper Range	25	150,000	46 00	...	49.00	46.50	49.00	47 00	49.00	48.00	48 75	48.50	48 00	...	3,405
Crescent, s.	10	300,000	...	...	...	...	...	...	...	...	5	...	.55	...	700
Dominion Coal	100	300,000	58 00	57 00	57 00	56 00	57.00	55 50	56.50	54 5	56 00	54.75	55 00	54 00	9,145
do. pref	100	150,000	1 9	...	118	...	119	...	...	...	119¾	...	...	...	36
Federal Steel.	100	30,000	62 88	61 00	61 50	59 63	61.38	60 5	60 00	59 00	61 00	59.75	59 00	58 00	10,572
do. pref	100	464,843	83 63	82 50	82 00	81.50	82 00	81 63	82 00	81 00	81 50	80 25	81 75	80 25	2,805
Franklin, c	25	527,676	22 25	21 00	23.00	22.50	22.50	22 00	22 00	21 13	21.75	20.00	20 50	0.0	13,449
Humboldt, c.	25	40,000	3 00	2 75	3 0	2.88	...	...	2.13	...	2 75	...	...	...	535
I. Royal Con. c.	25	100,000	6 00	5 75	6 00	5 75	6 00	5 75	6 00	5 75	6 00	5 75	6 00	5 75	2,367
Mass. con	25	100,000	15.50	13 00	15 00	....	13 00	...	13 25	....	13.00	...	...	...	485
Melones	10	167,377	4.00	...	4.00	...	...	...	...	...	...	...	...	...	350
Merced, g	15	100,000	6.50	...	...	...	6 50	6 00	...	...	11.00	...	16.00	15.50	1,437
Mohawk, c.	25	100,000	31 00	...	31 00	....	31 00	....	32.00	31.00	31 0	30.50	30.75	30 50	1,755
New Idria, q.	5	100,000	...	...	...	...	...	...	...	...	11.00	...	...	...	50
N.A.Gold Dre'g	10	100,000	39.50	39 00	39 00	38.50	...	...	...	...	...	...	...	...	300
Old Colony, c.	25	100,000	14.00	13 00	14 25	14.00	14 00	13.75	14 00	13 50	14.00	13 25	...	...	874
Old Dominion, c	25	150,000	44 25	42 75	43 75	41 00	44 00	41.75	44 00	43.25	43 50	42.75	43.00	42 00	5,615
Osceola, c.	25	93,000	90.00	*8800	91.00	88.50	89 00	88 50	89 00	88 75	88.75	88 00	87 00	86 00	1,803
Parrot, s c	10	230,000	65 00	62 00	65.5	64.75	66 .25	65.50	69 00	65.00	65 00	63 00	62 50	...	3,357
Pioneer, g	10	100,000	...	...	...	...	...	...	2 75	....	...	...	2.88	...	145
Quincy, c	25	100,000	165	...	165	....	...	...	165	....	165	....	...	...	243
Rhode Island	25	100,000	11 00	10 75	...	...	11 00	10 75	...	...	11 00	...	11.00	10.50	865
Santa Fe, g. & c	10	200,000	15 00	13 75	15 00	14.00	14 25	4.00	14 25	14.00	14.25	4.00	13.88	....	2,895
San. Ysabel, g.	5	130,000	14.50	12.50	14 75	14.00	14 0	13.50	13.5	...	15 00	14 0	14.50	....	2,174
Tamarack, c.	25	60,000	230	...	230	...	...	...	...	....	2.3	...	2.30	....	209
Tecumseh, c.	25	40,000	6.50	...	6.50	...	...	...	6.50	....	6 25	...	...	...	310
TrimountainMg	25	100,000	...	....	13 00	12.00	12 00	...	12 00	...	12 00	...	11 50	11 00	495
U C L & Mc. Co	25	80,000	9.00	...	9 00	...	9 00	...	...	...	...	...	9.00	8.50	1,125
United States	25	250,000	25 00	23.13	24 88	24 25	25 50	24 88	25 88	25.00	25 50	24 75	25 00	24 50	32,406
Utah Cons.g &c	5	3,000,000	44 75	43.00	46.50	43.50	45.25	44 25	46.00	45.00	45 00	44.00	44 00	42 75	9,300
Victor, g.	5	200,000	...	...	3.00	....	...	...	...	...	...	...	3.93	....	150
Washington	25	40,000	2.13	....	...	...	...	...	...	...	2.00	...	...	...	305
White Knob	100	58,900	...	...	...	...	...	...	...	...	19.00	...	...	...	25
Winona, c	25	100,00	16 50	15 75	16 50	...	16.00	15 75	16 25	...	17 00	15 75	15 50	15 00	1,587
Wolverine, c.	25	60,000	46 50	46 00	46 00	45 13	46.00	45.50	46 00	45 50	45 50	45 00	45 00	44 00	1,852
Wyandotte	...	...	8 00	...	8 00	7 75	8.00	...	...	...	8.00	...	8 00	...	600

†Official quotations Boston Stock Exchange. Total sales, 141,752 * Ex-Dividend.

CLEVELAND, O.

May 25.

Name of Co.	Iron Range.	Par Val.	May 25 Bid.	May 25 Ask.	Name of Co.	Iron Range.	Par Val.	May 25. Bid	May 25. Ask
Aurora	Gogebic	$25	$15	$4	Jackson	Marquette	$25	...	...
Champion	...	25	15	25	Lake Superior	...	25	$41	$45
Chandler	Vermillion	25	59	61	Minnesota	Verm. & Mes	100	91	92
Cleve'd-Cifs.	Marquette	100	85	90	Pitts & L'keAng	Marquette	25	115	125
Fed. Steel Co.		100	29½	30	Republic	"	25	15¼	16

BUTTE, MONT.*

April 30.

Name.	Location.	Par Val	Quotat'ns. Bid.	Quotat'ns. Ask.	Sales.	Name.	Location.	Par Val	Quotat'ns. Bid.	Quotat'ns. Ask.	Sales
Alice g	Mont.	$25	$0.60	$0.90	....	Lone Pine C., g	Wash	$1	.....	$0.39	....
Am. Dev. & M	"	5	.05	.25	.....	Mont. Ore P	Mont.	25	....	150.00	.....
Anaconda, g	"	2	.....	66 00	.....	Morn. Glory, g.	Wash	0.10	.....	.15	.....
Hope (Basin)	"	...	.....	2.00	.....	Mountain L	"	0.10	.....	1.30	.....
Black Tail, g	Wash	...	.....	.11	.....	New South Cr's	Mont	$0.05	.....	...	.....
Con. Gran.-Bim.	Mont.	...	3.00	5 00	.....	Number Six, g.	Wash	0.10	.....	.06	.....
Con. Tiger-Poor.	Idaho	1	30	.40	.....	Rebate, g.	"	1	....	.20	.....
Gold Mn. (Ruby)	Mont.	...	.....	.30	.....	Republic G	"	1	...	1.40	.....
Iron Mn, g	"	...	.05	.15	.....	San Poil, g	"	1	....	.24	.....
Jim Blaine, g	Wash	...	.....	.48	.....	Tom Teumb, g	"	1	....	.26	.....

* Specialty reports by the Hewett-Sisley Company.

COLORADO SPRINGS COLO.‡

Name of Company.	Par val	May 15. H.	May 15. L.	May 16. H.	May 16. L.	May 17 H.	May 17 L.	May 18 H.	May 18 L	May 19 H.	May 19 L.	May 20. H.	May 20. L.	Sales
Alamo	$1	.07¾	...	07¾	...	07¾	08	...	...	.07¾	...	...	...	1,000
Anaconda	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Arg'ntumJ	1	...	...	.30½	.31	30	...	.33	.33¼	...	...	...	...	7,300
C. C. Con	1	10¾	...	.10¾	...	...	...	.10½	...	10	...	...	...	25,500
Crocus	1	...	...	...	...	...	...	...	...	.006¾	...	...	...	3,000
Currency	1	...	...	...	...	05¾	06	...	...	06	...	...	...	1,500
Dante	1	...	...	...	...	...	...	11	11¼	...	...	...	...	8,000
ElktonCon	1	90	...	...	...	.89½	90	.89¾	.90	.89	...	...	...	4,700
El Paso G	1	.18½	...	.20¾	...	.21¾	22	.21¾	.23½	.24¾	25	...	...	30,954
Favorite	1	.14¾	...	...	...	...	...	...	...	.01¾	...	...	...	3,000
Findley	1	13¾	...	.15	...	.15	...	...	...	...	...	...	...	21,000
Golden Fl	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Hayden G	1	...	...	01¾	...	.01¾	...	.01¾	...	...	...	...	...	28,000
Ing. Con	1	08	...	.07¾	...	...	...	.08	...	...	...	...	...	3 500
Isabella	1	.88¾	.89	.88½	89	.88¾	.89¾	.89¾	90	.88	.89¾	...	...	32,500
Jack Pot	1	.43¾	.43¾	.48¾	...	.43¾	...	.43¾	.44	.43	...	...	...	10,000
Lexington	1	.13¾	.14	.13¾	.15¾	.13¾	.14	.13¾	.14	.13¾	.14	...	...	281,000
Ma'net R	1	.04¾	...	.04¾	.04¾	.04¾	05	.04¾	.4¾	.04¾	05	...	...	113,900
Marion	1	...	...	003	...	005	...	...	...

STOCK QUOTATIONS.

DENVER, COLO.†

NAME OF COMPANY.	Par val.	May 15 B.	May 15 A.	May 16 B	May 16 A	May 17. B	May 17. A.	May 18. B	May 18. A.	May 19 B.	May 19 A.	May 20. B.	May 20. A.	Sales.
Mines:														
Anac'da G.	$5	.0	.54	.54	.55	.54	.55	.53	.55	.....	.....	.....	.....	3 0
Anz. J.....	1	20½	.31	.30½	...	30½	.32	.29¾	.32	.....	.....	.....	.....	2,2 0
Bankers..	1	09	.10	.09	...	09	.10	.08¼	.09¾	.....	.....	.....	.....	.....
CrippleC.C.	1	...	...	...	...	...	...	05¢	...	.....	.....	.....	.....	.....
Dell & S	1	.03¾	...	.03½	...	03½	...	(33¾	...	.....	.....	.....	.....	.....
Elkton Con.	1	9.0¾	.91½	10½	.....	89¾	...	.....	...	.....	.....	.....	.....	.....
El Paso.	1	.13½	.20	.....	...	.20	.22	.3	.20½	.....	.....	.....	.....	.....
Enterprise	1	07½	...	07¾	...	07	...	...	...	.....	.....	.....	.....	.....
Fanny B..	1	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....
Findley.	1	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....
Garf Con..	1	...	.14½	13¾	15	14¾	.15	.14	.15	.....	.....	.....	.....	6,000
Gold Coin.	1	1.97	...	1.98	...	1.94½	...	1.93	...	.....	.....	.....	.....	.....
Gold Fleece	1	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....
Gold Eagle.	1	38	...	...	...	...	...	...	...	.....	.....	.....	.....	.....
Independ'nce	1	62	.64	62	64	...	...	...	...	.....	.....	.....	.....	.....
Iron Clad.	1	03¾	.03½	03½	...	03¾	.04¼	03¾	03¾	.....	.....	.....	.....	5,0.0
Isabella....	1	.87½	.89½	87	89	88	.88¾	.88½	...	.....	.....	.....	.....	1,000
Jack Pot..	1	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....
Jefferson.	1	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....
Keystone	1	.11¾	.11¾	.....	.....	...	11¾	.10½	.11¾	.....	.....	.....	.....	1',5.0
LosAngeles	1	.10	.12	.....	.....	9¾	11¾	.10¾	...	.....	.....	.....	.....	.....
Mollie Gib.	5	...	80	...	...	26	.2 ½	.7	31	.....	.....	.....	.....	.....
NewZealno	1	.2.½	35	...	...	.2½	.34¾	.33½	.40	.....	.....	.....	.....	4,500
Ophir	1	33	.33¾	33¾	33½	.33½	34½	.34¼	.35	.....	.....	.....	.....	3,500
Pharmacist	5	06	.07	...	...	06	07	...	...	.....	.....	.....	.....	.....
Portland..	1	1 98	...	1 97	1.99	1 97	1 99	1.98	1.98¾	.....	.....	.....	.....	.....
Pr. Albert..	1	...	...	04¾	04½	04¾	04½	04¾	.04½	.....	.....	.....	.....	5 0.0
Specimen..	1	...	...	.5	...	...	...	...	...	.....	.....	.....	.....	.....
Union Gold	1	...	.23	...	...	21¾	22	21	...	.....	.....	.....	.....	.....
Va. M	1	.04¾	05¾	.04¾	.05	04¾	04½	.01	.04¾	.....	.....	.....	.....	10.009
Work	1	.18¾	...	...	...	...	...	.21	.21¾	.....	.....	.....	.....	.....
Prom'ctis.														
Ben Hur	1	.04	...	05	...	.05¾	...	...	...	.....	.....	.....	.....	.....
C C Copper'l	1	.02	.002½	0.2¾	.00 3¾	00 8¢	0.2¾	.02	.02 2½	.....	.....	.....	.....	2,0 0
Reno..	1	02¾	03	.02¾	.03	02¾	03	.02¾	03	.....	.....	.....	.....	7,0 0
Tamarack..	1	...	...	.07	...	067	...	.07	.015	.....	.....	.....	.....	.....
Miscell :														
Acacia..				10	...	(.03¾	.10	...	...	.....	.....	.....	.....	12,000
Alamo ..	1	0.3¾	...	.05½	.18½	.13¾	.18	.17¾	05¾	.....	.....	.....	.....	8, 0)
Buckhorn ..	1	...	...	.05½	.04	03¾	...	...	...	.....	.....	.....	.....	.....
C C & M...	1	...	1 ½	08½	10	.....	.09¾	08½	09	.....	.....	.....	.....	.....
Franklin..	1	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....
Go dstone .	1	.01¾	.11½	.01¾	01½	...	...	.01¾	0 ¾	.....	.....	.....	.....	.....
Mobile ..	1	04	.0 ½	...	...	03¾	07¾	.03½	.07¾	.....	.....	.....	.....	.....
MountainB.	1	.04¾	.5	.04¾	.5	04¾	05¾	04¾	...	.....	.....	.....	.....	1,00)
Omega....	1	02¾	.02¾	.02¼	.02¾	0.3¢	.02¾	04	.02¾	.....	.....	.....	.....	2,00)
Pinnacle..	1	...	...	.02¼	.02¾	...	...	...	...	.....	.....	.....	.....	.....
Trachyte...	1	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....

†Official Quotations Denver Stock Exchange. Sales: Mines, 49,000 shares; Prospects, including those mentioned, 91,000 shares; Miscellaneous, 23,000 shares; total, 81,000 shares.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par. value.	May 18.	May 19	May 20	May 22	May 23	May 24.
Alpha Con.	Nev.	1.00	.04	.04	01	....	.14	.07
Alta.....	"	2.00	.07	.07	.16	05	.04	.05
Andes.....	"	3 00	.07	19	09	01	.19	.08
Belcher.....	"	3 00	.34	36	34	37	35	.34
Best & Belcher...	"	3 00	50	.50	.49	52	54	.52
Bullion.....	"	1.00	.16	.16	....	07	07	.07
Caledonia.....	"	3.00	.46	52	.19	55	.58	.52
Challenge Con.....	"	3 00	33	34	.34	34	.35	.34
Choliar.....	"	3.00	30	30	.29	33	32	.30
Confidence.....	"	3.00	9o	1 10	1 00	1.10	1.00	1.00
Con. California & Virginia..	"	2 50	1 40	1 40	1.45	1 75	1 70	1.70
Cons. Imperial.....	"	1.00	...	01	.01	01	....	.01
Cons. New York.....	"	1.00	...	...	...	...	...	...
Crown Point	"	3 00	.25	28	.29	.30	29	.28
Exchequer.....	"	1.00	...	...	...	...	...	...
Gould & Curry.....	"	3.00	29	31	30	.30	33	.32
Hale & Norcross ..	"	3 00	33	34	.33	.34	36	.34
Julia Con.....	"	1.00	02	02	02	.02	02	.02
Justice.....	"	2.00	18	.20	19	.20	.21	.20
Kentuck Con.....	"	1 00	05	04	.04	....	....	...
Mexican.....	"	3.00	44	44	.43	.47	70	.47
Occidental Con.....	"	3 00	27	26	.25	25	25	.27
Ophir.....	"	3 00	1 00	1 00	1.01	1 10	1 15	1.10
Overman.....	"	2.00	11	11	.....	18	18	.16
Potosi.....	"	3 00	25	.25	.25	.39	.40	.39
Savage.....	"	2 50	23	24	23	26	.28	.25
Seg. Belcher & M.....	"	2 00	02	03	.03	02	02	.02
Sierra Nevada.....	"	3 00	77	.77	.76	77	82	.6
Silver Hill.....	"	1.00	...	...	...	.02	...	.01
Standard.....	Cal.	10.00	2 75	2.75	2 75	....	2 75	2.80
Union Con...	Nev.	2 50	42	43	.42	47	.46	.44
Utah Con.....	"	1.00	.14	.15	.15	17	18	.17
Yellow Jacket.....	"	3.00	.35	40	.40	41	.42	.39

Official telegraphic quotations of San Francisco Stock Exchange

ROSSLAND, BRITISH COLUMBIA.*

May 18.

NAME OF COMPANY.	No. of shares.	Par value	Selling price.	NAME OF COMPANY.	No. of shares.	Par value	Selling price.
Brandon & Gold. Cr..	1,500,000	$1	$0 28	Lerwick.....	500,000	$1	.....
Brit. Amer. Corp'at'n	7,500,000	5	6.25	Lily May..	1,000,000	1	.....
Brit Col. Dev. Co....	1,500,000	2½	5 50	Lon.&Van.Fin.Dev.Co	500,000	5	.....
Canadian Gold Fields	10,000,000	0 10	.10	London B. C. Gold F..	250,000	5	$9.00
Caribou.....	1,500,000	1	1.35	Monte Cristo	1,000,000	1	.....
Commander.....	500,000	1	....	New Gold Fields, B.C.	250,000	1	5.25
Deer Park..	1,000,000	1	...	Noveity.....	1,000,000	1	05
Dundee.....	1,000,000	1	22	Queen Bess Prop.. ..	120,000	5	3.75
Evening Star.....	1,000,000	1	.12	Rambler Con.....	1,000,000	1	36
Fern	200,000	½	.52	Reco.....	1,200,000	1	.....
Gold Fields of B.C....	3,000,000	3¾	5.25	Red Mt.View	1,000,000	1	.....
Hall Mines.....	250,000	5	2 75	St. Elmo.	1,000,000	1	.....
Hattie Brown.....	1,000,000	1	.....	St. Paul.....	1,000,000	1	.....
Homestake.....	1,000,000	1	.04	Sarah Lee	1,000,000	1	...
Iron Colt.....	1,000,000	1	.....	Silver Queen..... ..	1,500,000	1	.15
Iron Horse.....	1,000,000	1	13	Slocan Star.....	500,000	1	2.00
Iron Mask.....	500,000	1	1 25	Vic.Tr. MinesDev. Co.	25,000	5	.....
Josie	700,000	1	.....	Virginia	500,000	1	.....
Jumbo.....	500,000	1	.....	War Eagle Con.....	2,000,000	1	3 75
Kenneth.....	1,000,000	1	...	Waverly Mines.....	100,000	5	2.00
Keystone.....	1,500,000	1	.....	White Bear.	3,000,000	1	0.10
KootenayGold Fields	20,000	...	.....	Wild Horse..... ..	400,000	1	....

* From Our Special Correspondent.

VALPARAISO, CHILE.*

April 22.

NAME OF COMPANY.	Location.	Capital paid.	Sh. Val. paid up.	Last Div'nd. Amt.	Last Div'nd. Date.	Prices. Bid.	Prices. Asked.	Prices. Last sal
Arturo Prat, silver.....	Chile..	$3,300,000	$100	4 p. c.	1897	24	25	24½
Caracoles, silver	" ...	315,000	100	10 "	1894	.....	.....	.....
Huantajaya (mine) silver	" ...	1,000,000	100	13 "	1894	.....	.....	.....
Huanchaca, silver.....	Bolivia.	8,000,000	25	4 "	1895	32	38	4)
Oruro, silver.....	Chile...	900,000	200	.....	.....	240	360	300
Todos Santos, silver.....	" ...	2,000,000	100	1 "	1895	6	8	6
Agua Santa nitrate.....	" ...	3,000,000	50	5 "	1898	162	165	165
Antofagasta, nitrate.....	" ...	2,000,000	200	2 "	1898	140	145	140
Soc. Internacional, nitrate	" ...	950,000	60	.....	.....	8	5	.....
Union, nitrate.....	" ...	3,000,000	200	.....	.....	38	42	40

* Special report of Jackson Bros. Values are in Chilean pesos or dollars

SALT LAKE CITY, UTAH.*

May 20

STOCKS.†	No. of shares	Par val.	Bid.	Asked.	STOCKS.†	No of shares.	Par val.	Bid.	Asked
Ajax.....	300,000	$10	$1.50¾	$1.51½	Homestake.....	400,000	$1	.....	$0 15¾
Alice.....	400,000	25	.60	1.10	Horn Silver.	400,000	25	$1 50	2 00
Anchor.....	150,000	10	...	1 50	Little Pittsburg	400,000	5	.07¾	09¾
Buckeye.....	500,000	1	03¾	04½	Lower Mammoth	150,000	1	.03¾	.....
Bullion-Beck & Ch.	100,000	10	5 90	6 50	Mammoth.....	400,000	5	1.93	1 97
Centennial Eureka	80,000	50	50 00	55 00	Mercur.....	200,000	25	7 20	7.50
Chloride Point....	500,000	1	.80	.82	Northern Light..	400,000	5	73¾	.74½
Daisy..	500,000	3	.27½	.28	Omaha.....	300,000	2	.32	.36
Dalton.....	500,000	5	.02	0.3¾	Ontario.....	150,000	100	7.50	9 50
Dalton & Lark....	2,500,000	1	.10	.10¾	Richmond-An. ..	500,000	1	10	.13
Daly.....	150,000	20	1.24	1.45	Sacramento	1,000,000	5	45	47½
Daly West.....	150,000	20	9 87	9.95	Silver King.	150,000	20	38.0)	...
Dexter.....	200,000	5	2.50	2 88	Star Consolidat'd	500,000	1	.94	.96¾
Eagle.....	150,000	1	.07¾	.08½	Sunbeam.....	250,000	1	.46	.49
Eagle & Blue Bell.	250,000	1	1 89¾	1.4+	Sunshine.....	250,000	10	72½	.80
Emerald.....	300,000	1	13¾	15¾	Swansea	100,000	5	4 05	.....
Four Aces.....	250,000	1	29½	31	South Swansea..	150,000	1	1.50	1 54
Galena	100,000	10	33	34	Tetro	300,000	1	08½	.12
Geyser-Marion.....	800,000	5	77¾	78	Utah.....	100,000	1	1 00	1.12
Grand Central.....	250,000	1	7 82¾	7.93	Valeo	200,000	10	1.14	1 18

*From Our Special Correspondent. † Utah companies. § Mines in Vanderbilt, Cal. Mines in Tuscarora, Nev.

SPOKANE WASH.*

May 3.

NAME OE COMPANY.	Par val.	No. of Shares.	May 1. B.	May 1. A.	May 2. B.	May 2. A	May 3. B.	May 3. A.	May 4. B.	May 4. A.	May 5. B.	May 5. A	May 6 B.	May 6 A.	Sales.
Ben Hur	$1	60 ,00	.16	17	.14¾	17	14¾	.17	.15	17	18	17	15¾	.17	750
Black Tail	1	1,0.0,000	10¾	.11	10	11	10¾	.11	10¾	12	10¾	11¾	.10	12	4,3 0
Butte & Boston	1	1,000,00	06	07¾	06¾	07¾	.06¾	07	06¾	07	08	.06	8		5,000
Insurg'nt ..	0.10	,000, 00	09¾	10¾	.09½	10¾	095	1 3¾	10	1 5	105	115	10¾	12	2,0 0
Jim Blaine ..	1	1,000 00	37½	40	.38	40	.37	.39	375	59	.37¾	.39	.385	.40	18.0 0
Lone Pine	1	1,0.0,0.0	.41	.43	4	42	41	43	.405	58	40	55	.43	.45	184 00
Morning Glory	0 10	1,000 0.0	12	.14	12	13¾	13	145	13	1¾	.13¾	145	13¾	.145	55,000
Mountain Lion	0 10	1,500,00	20	1 2½	1 22	1 25	1.25	1.30	1.255	1 40	1 28	1 3	1 30	1.4)	37,250
Pearl ..	1	1,000,.00	1.½	11¾	1.½	.1	11	12	1.½	12	1 5	12	11¾	125	7, 0
Princess Maud.	0.10	1,000 0.0	07¢	08¾	07¾	.085	08	.09	08¾	095	08	.098	08¾	.095	86 7 0
Quilp	1	1,00 0,0.0	.11	12	11	.1	11	12	11	12	1	12	.11	.12	9,00
Rebate	0 10	,000,000	17	.19	17	19	.17	9	7	188	17	19	17	.19	12,000
Republic Con..	1	3,000,00	1 38	1 41	1 39	1 40	1 41	1.42	1.43	1.44	1.43	1.44	1.43	1.45	182, 0
San Poil	1	500,0.0	68	.70	68	.70	65	68	67	69	68	7	68	.70	17,000
Surprise.	1	,000,00	12½	14	12¾	14	1.	18	.16	18	.18	.20	.185	.20	20,000
.....		...	...	...	...	...	...	...	...	...	...	...	...	...	...

* Specially reported by the British-Canadian Investment and Mining Syndicate. Total sales, 824,1.0 shares

TORONTO, CAN.*

NAME OF COMPANY.	Par val.	May 17. B.	May 17. A.	May 18. B.	May 18. A.	May 19. B.	May 19. A.	May 20 B.	May 20 A.	May 22. B.	May 22. A.	May 23. B.	May 23. A.	Sales
Ontario														
Golden Star	$1	52	53½	53	53¾	52¾	53	...	...	52	53¾	...	...	9,700
Ham Reef	1	39¾	.40½	39	.40	.41¾	42	...	...	.39	41	...	...	1,500
Hiawatha..	1	.22	.24	.2	.4	.24	.25	...	...	.23	.24	...	...	1,000
J. O. 41	1	07¾	09	.08	.08¾	07¾	.08¾	...	...	07½	08¾	...	...	4,5 0
Sentinel	1	.16	.18½	.16	.1.½	16	18½	...	...	.16	18½	...	...	500
Sup G & C	1	06	07	.05	.07	06	07	...	...	06	07	...	...	5 0
British Col.														
Alice A.	1	.17¾	20	...	...	.19½	...	...	...	...	...	...	...	6,500
Athabaska	1	4	42¾	.40½	.43	4 ½	42¾	...	...	.39½	.42½	...	...	2,600
Big Three..	1	22¾	23½	.4.½	.23½	22	.23½	...	...	22	23½	...	...	3 500
California.	1	.06½	...	...	...	...	...	...	...	.07	...	...	...	2,5 0
C'ribou	1	1 35	1 40	1.35	1.40	1 35	1 40	...	...	1 35	1 39	...	...	600
Dardanelles	1	14	.15	.14½	.1	14½	18	...	...	13¾	14¾	...	...	38,0 0
Deer Park .	1	04¾	06	.0 .¾	.01	.0 ½	08	...	...	.04	06	...	...	4,7.0
Iron Mask..	1	.61	70	.60	.70	.54	65	...	...	50	.65	...	...	500
Minnehaha.	1	23½	27	.25	27	.24½	.25	...	...	22	25	...	...	2,0 0
Monte Crist	1	.11¾	.12½	.11½	.13	11¾	12½	...	...	.10½	12	...	...	13,5 0
Morrison ..	1	16	18	.15	.18	.16	18	...	...	16	.18	...	...	2, 0)
Noble Five..	1	27	.28	.24½	.28	.27	2½	...	...	.27¼	28	...	...	4,500
N'rt'n Belle.	1	0.½	04¾	.03	.0.½	04	.0.½	...	...	0.½	.03½	...	...	2 5.0
Rambler C.	¾	35½	40	.36¾	.38	34	36½	...	...	3)	35	...	...	500
Republic..	1	1.34	...	...	...	...	...	...	...	...	...	...	...	5 0
St Elmo ..	1	05½	06¾	.05	.06½	05	.06	...	...	05	.07	...	...	1,9.0
Silver Bell..	1	03	.03½	.01	.03½	02¾	.03	...	...	02	03¾	...	...	4,3e0
Smuggler...	1	03¾	.04	.03¾	.03½	.03½	.04	...	...	03½	.04	...	...	24,5 0
Van Anda ..	1	06¾	.07	.0 .½	.07½	.06¾	.06¾	...	...	.05¾	06¾	...	...	12.500
White Bear.	1	04¾	05¾	.04¾	.03½	04½	0	...	...	04¾	.0 ¾	...	...	6,000
Winn peg	1	.29	.31	.9	.30½	30	30¾	...	...	.3)	31	...	...	9,500
Develop Co.														
B.C Gold F.	1	.01¾	.03½	.04¾	.03½	.0.½	.05	...	...	(4½	05¾	...	...	
Can. G.F.S.	1.10	0	07½	.03¾	.07	05	.07	...	...	.05	07	...	...	10,50)
Gold Hills .	1	06	07½	.06	.07¾	05¾	07½	...	...	05	07	...	...	1,500

* Official quotations of the Toronto Mining and Industrial Exchange. Total shares sold, 177,1 0.

MEXICO.

May 18.

NAME OF COMPANY.	No. of shares.	Last div'd.	Prices. Op'g	Prices. Cl'g.	NAME OF COMPANY.	No. of shares.	Last div'd	Prices. Op'g.	Prices. Cl'g.
Chihuahua:					Hidalgo:				
Gloria.....	1,500	.....	$50	$50	Real del Monte..	2,554	10 00	760	750
Durango:					San Francisco He	6,000	2.00	190	165
Barradon y Cab....	2,400	.....	100	80	San Rafael y An.	1,200	12.00	1,0 0	1,000
Candelaria de Pan.	1,200	.....	20	20	do. aviado	1,200	5.00	400	410
Capuzayas.....	2,400	.....	30	30	do. del Oro....	5,000	5.00	5)	5
Penoles..... ...	2,500	30.00	2,000	2,000	Soledad..... ..	950	5 00	35)	350
Restauradora.....	10,000	.....	20	20	Sorpresa....	960	5 00	200	210
Rosario y Anexas..	4,800	.....	10	10	Union Hacienda.	2,000	5.00	385	380
Guanajuato:					Mexico:				
Angustias.....	2,400	5.00	405	390	Coronas	500	.....	75	75
Cinco Senores y An	2,0.0	15.00	415	390	Esperanza y An..	3,000	10 00	1,750	1,730
El Oro.....	500	.....	30	30	Michoacan				
do. pref.	2,000	...	30	30	Luz de Borda ava	3,000	.....	50	40
Guadalupe Hacie'a	10,000	2.00	235	240	do aviado	1,000	.....	20	20
Trinidad, aviador .	2,000	...	1.5	140	Pueblo'				
do. aviado.....	400	...	100	128	Tlauzingo...	2,400	.....	27	28
Zona Minera de Paz	2,400	..	68	65	S. Luis Potosi'				
Hidalgo:					Concep. y An.	2,400	.....	160	100
Amistad y Concord.	9,600	2.09	32	30	Sta. Mariadela Paz	2,400	10 00	715	720
Arevalo.....	720	.....	200	200	Zacatecas:				
Bartolome de Med.	2,000	3.00	80	70	Asturiana y An.	3,500	10.00	100	80
Carmen.....	1,100	7.75	470	465	Cabezon	2,400	.....	15	15
Luz de Maravillas..	1,100	...	200	200	C'delar. de Pinos.	2,500	.....	95	90
Pabellon.....	1,000	27.89	20	20	Palma de Somb..	2,400	.....	100	80

NOTE.—In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $50 or $100. Prices are in Mexican dollars.

SHANGHAI, CHINA.*

April 10.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelubu Mg. & Trad....	China.....	45,000	$5	$5	Oct., 1894..	$0.25	Taels 6.20
Junjom Mg., Ltd. ...	"	60,000	5	5	.....	.....	" 4.02
do. pref	"	30,000	5	5	.....	.....	" 1.02
Raub Australian G. Mg...	"	200,000	$1	14s. 10d.	July, 1898.	.51	" 44 16
Sheridan Con. M.& M.	Colorado, U.S	20,000	Taels 100	Taels 100	.....	.....	" 4 00

*Special report of J. P. Bissett & Co. The prices quoted are in Shanghai taels.

STOCK QUOTATIONS.

PARIS.

May 4.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	75.00	2,245.00	2,260.00
" " Firminy	"	" "	3,000,000	500	85.00	3,875.00	3,795.00
" " Fives-Lille	"	" "	12,000,000	500	35.00	600.00	597.50
" " Huta-Bank	Russia	Iron & steel		500		4,525.00	4,515.00
" " la Marine	France	Steel mfrs.	20,000,000	500	40.00	1,724.00	1,760.00
" " Longwy	"	" "		500	85.00	1,190.00	1,192.00
Anzin	"	Coal			190.00	5,700.00	5,525.00
Blache-St. Vaast	"	Steel		1,000	160.00	3,800.00	3,800.00
Boleo	Lower Cal	Copper		500	1.07	2,780.00	2,740.00
Briansk	Russia	Coal & Iron		500		1,427.50	1,467.00
Bruay	France	Coal	3,000,000	400	900.00	39,630.00	42,250.00
Cape Copper	S. Africa	Copper	15,000,000	50	1.50	123.00	121.00
Champ d'Or	"	Gold	3,375,000	25		62.00	61.75
Courrieres	France	Coal	600,000	300	60.00	2,375.00	2,400.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	728.00	745.00
Denain-Anzin	France	Steel		500	20.00	930.00	965.00
Dombrowa	Russia	Coal		500	12.50	1,149.00	1,160.00
Donets	"	Steel				1,232.50	1,225.00
Dourges	"	Coal		1,000	300.00	21,900.00	22,450.00
Dynamite Centrale	France	Explosives		500	12.50	545.00	540.00
Epinac	"	Coal		2,500	20.83	585.00	585.00
Escombrera-Bleyberg	Spain	Lead		500	35.00	1,231.00	1,249.00
Fraser River	Brit. Col'mb	Gold	250,000	25		8.50	7.50
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	71.00	63.00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	93.00	87.50
Lagunas	Chile	Nitrates	16,250,000	125	12.50	35.00	35.00
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	610.00	630.00
Lautaro	Chile	Nitrates	13,750,000	125		101.00	100.00
Malfidano	Italy	Zinc	12,500,000	500	40.00	1,375.00	1,500.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	30.00	640.00	594.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	1,280.00	1,295.00
Napthe Baku	Russia	Petroleum				841.00	833.00
Napthe, Le	"	"				2,150.00	2,200.00
Napthe Nobel	"	"				670.00	655.00
" " parts	"	"				13,375.00	13,250.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	30.00	410.00	409.00
Penarroya	Spain	Coal, etc		500	65.00	2,675.00	2,685.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25		8.50	8.25
Rio Tinto	Spain	Copper	40,625,000	125	47.70	1,198.00	1,270.00
" " preferred	"	"	40,625,000	125		157.50	162.00
Rive-de-Gier	France	Coal				22.00	22.00
Robinson	S. Africa	Gold	66,750,000	125	12.50	278.00	272.00
St. Etienne	France	Coal			18.00	499.00	498.00
Salines de l'Est	France	Salt		500	11.50	270.00	275.00
Salines du Midi	France	" etc		500	25.00	855.00	865.00
Sels Gem.de la Rus. Mer	Russia	" etc		500	25.00	585.00	531.00
Tharsis	Spain	Copper	33,750,000	50	8.75	241.50	245.00
Vicoigne-Nœux	France	Coal		1,000	700.00	23,550.00	23,000.00
Vieille Montagne	Belgium	Zinc	9,000,000	80	30.00	890.00	875.00

MEETINGS.

NAME OF COMPANY.	Location.	Meeting.	Date.	Place of Meeting.
Alta Argent	Colorado	Annual	June 8.	Des Moines, Ia.
Anaconda	Montana	"	May 31	Anaconda, Mont.
Basin & Bay State	Montana	"	May 27.	Basin, Mont.
Best & Belcher	Nevada	"	July 2.	309 Montgomery st., San Francisco, Cal.
Breece	Colorado	Special	June 5	24 Broad st., New York City.
Bunker Hill & Sull	Idaho	Annual	June 17.	Crocker Bldg., San Francisco, Cal.
Cadmus	California	"	May 31	18 Geary st., San Francisco, Cal.
Crown Point	Nevada	"	June 7.	Mills Building, San Francisco, Cal.
Dominion Coal	N'a Scotia	"	June 1.	Boston, Mass.
East Sierra Nevada	Nevada	Special	July 17.	San Francisco, Cal.
Fresnillo		Annual	June 6.	27 William st., New York City.
Green Gold	California	Special	June 12.	San Francisco, Cal.
Helena & Idaho	Idaho	Annual	June 10.	Helena, Mont.
Ivanhoe	California	Special	July 10.	Mills building, San Francisco, Cal.
King James	Utah	"	May 27.	215 S. Main Street, Salt Lake City, Utah.
Melones	California	"	June 16.	San Francisco, Cal.
Merced	California	"	June 27.	Butte, Mont.
Morgan	Utah	"	June 3.	Masonic Building, Salt Lake City, Utah.
National Con	California	Annual	June 6.	San Francisco, Cal.
Nevada Queen	Nevada	Special	June 24.	Tuscarora, Nev.
Old Dominion Cop.	Arizona	"	June 15.	Jersey City, N. J.
Parrot	Montana	Annual	June 29.	Butte, Mont.
Pennsylvania Coal	Penns'v'ia	"	June 14.	Dunmore, Pa.
Quicksilver	California	"	June 19.	20 Nassau st., New York City.
Quincy	Michigan	"	June 7.	45 Broadway, New York City.
Rover	Utah	Special	June 15.	205 McCornick Bldg, Salt Lake City, Utah.
Tintic		Annual	June 14.	50 Broadway, New York City.
Union Con	Nevada	"	July 19.	309 Montgomery st., San Francisco, Cal.
Yellow Jacket	Nevada	"	July 20	Gold Hill, Nev.

LONDON.

May 12.

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers
			£ s. d.	s.d.		£ s. d.	£ s. d.
§Alaska-Mexican, g	Alaska	£300,000	1 0 0	0 4.8	May, 1899	17 6	1 2 6
§Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	" "	4 12 6	4 17 6
Anaconda, c., s	Montana	6,000,000	5 0 0	5 1¾	May, 1899	12 2 6	12 7 6
Cariboo, c f, pref	BritishCol'mbia	160,090	5 0 0	.....	.....	10 0	15 0
Chiapas, g., s., c	Mexico	252,500	1 0 0	.....	.....	5 0	7 0
Con. Gold Fields	"	300,000	1 0 0	.....	.....	1 1 3	1 2 6
§De Lamar, g., s	Idaho	400,000	1 0 0	6	May, 1899	5 0	7 6
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	1 0	June, 1898	1 3	3 9
Golden Gate, g	California	80,000	1 0 0	.....	.....	1 3	3 9
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Mar., 1899	1 5 0	1 7 6
Hall Mines, c., s	British Col	250,000	1 0 0	1 0	May, 1898	10 0	12 6
" "	"	1,000,000	5 0 0	.....	.....	8 6	8 9
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1899	1 6	3 1
Lillooet, F. R. & Car., g	British Col	300,000	1 0 0	.....	.....	5 0	10 0
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	7 6	8 6
Mountain Copper	California	1,250,000	5 0 0	2 6	Sept., 1898	7 7 6	7 12 6
Newfoundland, c	Newfoundland	250,000	1 0 0	.....	.....	1 5 0	1 10 0
Palmarejo & Mexican, g., s	Mexico	807,000	1 0 0	rts.	Dec., 1898	3 6	3 9
Piumas-Eureka, g	California	281,250	2 0 0	0 6	Oct., 1896	2 6	3 6
Richmond, g., s., l	Nevada	270,000	5 0 0	1 0	Dec., "	5 0	7 6
Sierra Buttes, g	California	245,000	2 0 0	0 6	Apr., "	6	10
Colomb. Hydraulic, g	Colombia	75,000	1 0 0	1 6	Jan., 1899	7 6	10 0
Copiapo, c	Chile	200,000	2 0 0	2 6	Apr., 1899	3 5 6	3 7 6
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Mar., 1899	1 15 0	2 0 0
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	Jan., 1899	1 7 6	1 8 6
Tolima A., s., g	Colombia	70,000	5 0 0	5 0	July, 1897	1 5 0	1 15 0
Tolima B., s., g	"	30,000	5 0 0	5 0	" "	15 0	1 5 0
UtahCon., g(Highl'ndBoy)	Utah	300,000	1 0 0	rts.	Mar., 1898	8 15 0	9 0 0
Ymir, g	BritishCol'mbia	200,000	1 0 0	.....	.....	1 7 6	1 10 0
British Am. Corp.		1,550,000	1 0 0	rts.	Dec., 1898	1 1 3	1 2 3
Linares, l	Spain	45,000	3 0 0	12 6	Mar., 1899	8 10 0	9 0 0
Mason & Barry, c., sul	Portugal	630,000	2 0 0	5 0	Apr., 1899	4 7 6	4 12 6
Rio Tinto, c	Spain	1,625,000	5 0 0	1 7 6	May, 1899	48 15 0	49 0 0
" pref	"	1,625,000	5 0 0	2 6	May, 1899	6 2 6	6 5 0
§Tharsis, c		1,250,000	2 0 0	10 0	" 1898	8 15 0	9 5 0
Assoc. Gold Mines	W. Australia	540,000	1 0 0	2 0	Feb., 1899	9 0 0	9 2 6
N.S. Wales	N.S. Wales	384,000	8 0 0	1 0	May, 1899	2 6 3	2 8 9
Great Boulder, Prop	W. Australia	1,750,000	2 0	x all	May, 1899	1 8 6	1 8 9
§Hannan's Brownhill, g	"	110,000	1 0 0	7 6	May, 1899	9 2 6	9 7 6
Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	Apr., 1899	11 11 3	11 13 9
Kalgurlie, g	"	120,000	1 0 0	rts.	Feb., 1899	9 8 9	9 11 3
§Lake View Consols, g	"	250,000	1 0 0	5 0	May, 1899	19 15 0	20 0 0
Mt. Lyell M. & R., l., c	Tasmania	975,000	3 0 0	2 6	Apr., 1899	9 5 0	9 10 0
§Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	May, 1899	5 7 6	5 12 6
Waihi g	New Zealand	320,000	1 0 0	2 0	Mar., 1899	6 15 0	7 0 0
West Aust. Jt. Stk. L. & F	W. Australia	1,000,000	1 0 0	1 0	Dec., 1898	8 3	8 9
§Champion Reef, g	Colar Fields	220,000	10 0	4	Jan., 1899	5 0	5 2 6
Mysore Gold, g	"	250,000	10 0	5 6	Mar., 1899	5 8 9	5 11 3
Nundydroog, g	"	242,000	1 0 0	1 6	" 1899	3 2 6	3 5 0
Ooregum, g	"	145,000	1 0 0	1 0	Dec., 1898	3 12 6	3 15 0
" pref. g	"	120,000	1 0 0	1 0	" 1898	4 5 0	4 10 0
Angelo, g	Transvaal	275,000	1 0 0	5 0	Mar., 1899	7 15 0	8 0 0
*Bonanza, g	"	200,000	1 0 0	10 0	Dec., 1898	4 17 6	5 2 6
§British S. Af., chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 16	3 17 6
Cape Copper, c	"	600,000	1 0 0	7 0	Jan., 1899	4 10 0	4 15 0
" pref	"	150,000	2 0 0	7 0	" 1899	4 5 0	4 15 0
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	6 0	Mar., 1899	6 0 0	6 5 0
Con Deep Level, g	"	200,000	1 0 0	xb.	Apr., 1898	3 12 6	3 17 6
§Crown Reef, g	"	120,000	1 0 0	10 0	May, 1899	18 0 0	19 10 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	21	Mar., 1899	20 1 3	20 3 9
Durban Roodepoort, g	Transvaal	135,000	1 0 0	5	Mar., 1899	6 5 0	6 10 0
Ferreira, g	"	90,000	1 0 0	30 0	Feb., 1899	24 5 0	24 15 0
Geldenhuis Deep, g	"	350,000	1 0 0	9 0	Feb., 1899	10 10 0	10 15 0
Geldenhuis Est., g	"	200,000	1 0 0	7 6	" 1899	8 10 0	8 12 6
Ginsberg, g	"	160,000	1 0 0	4 0	Feb., 1899	3 16 3	3 18 9
Henry Nourse, g	"	125,000	1 0 0	10 0	Feb., 1899	9 2 6	9 7 6
Heriot (New), g	"	115,000	1 0 0	5 0	May, 1899	7 7 6	7 12 6
Jagersfontein, d	Orange Fr. St.	1,000,000	5 0 0	9 0	Mar., 1899	14 16 3	14 18 9
Johannesburg Con. Invst	So. Africa	2,750,000	1 0 0	2 0	Aug., 1897	1 13 9	1 16 3
Jubilee, g	Transvaal	50,000	1 0 0	5 0	May, 1899	7 0 0	7 5 0
Jumpers, g	"	100,000	1 0 0	10 0	Feb., 1899	6 10 0	6 15 0
Kleinfontein, g	"	275,000	1 0 0	2 0	Mar., 1899	3 0 0	3 2 6
Langlaagte Estate, g	"	500,000	1 0 0	3 0	Mar., 1899	3 10 0	3 15 0
May Con., g	"	275,000	1 0 0	3 0	Feb. 1899	5 15 0	5 17 6
Meyer & Charlton, g	"	85,000	1 0 0	7 0	Jan., 1899	6 7 6	6 12 6
Namaqua, c	Cape Colony	200,000	1 0 0	2 6	Dec., 1898	3 12 6	4 0 0
Primrose (New), g	Transvaal	300,000	1 0 0	6 0	Feb., 1899	4 17 6	5 0 0
Rand Mines, g	So. Africa	400,000	1 0 0	61	Feb., 1899	42 5 0	42 10 0
Robinson, g	Transvaal	2,750,000	5 0 0	9 0	" 1899	10 15 0	10 17 6
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	1 6 3	1 8 9
Sim. & Jack Prop., g	"	5,000,000	5 0 0	3 6	Jan., 1899	6 5 0	6 7 6
Wemmer, g	"	80,000	1 0 0	15 0	Jan., 1899	13 2 6	13 7 6
Wolhuter, g	"	860,000	4 0 0	2 0	Feb., 1899	5 5 6	5 10 0
Worcester, g	"	100,000	1 0 0	3 0	May, 1899	3 0 0	3 5 0

* Dividend pending. § Ex-dividend. † Ex-rights.

DIVIDENDS.

NAME OF Co.	Date.	Am't.	Paid 1899.	Total.	NAME OF Co.	Date.	Am't.	Paid 1899.	Total.
Alamo, Utah			$2,500	$2,500	Lake Superior Ir			84,000	736,000
Alaska-Mexican			36,000	353,031	Lillie	May 1	12,500	62,500	227,860
Alaska-Treadwell			150,000	4,070,000	Mead, Cal			20,000	100,000
Ætna Con			20,000	170,000	Mercur			25,000	1,266,000
American Gold			21,000	407,000	Modoc	May25	10,000	50,000	130,000
Anaconda Copper	May 3	$1,500,000	1,500,000	9,750,000	Montana, Ltd			28,855	453,700
Anchoria-Leland			36,000	198,000	Mont. Ore Pur	May24	80,000	320,000	1,120,000
Apollo Con., Alas			40,000	140,000	Morning Star, Cal	May15	6,000	38,400	726,600
Argonaut, Cal			80,000	260,000	Moulton, Mont			20,000	480,000
Bald, Butte	May15	15,000	52,500	702,148	Mt. Shasta, Cal	May15	6,000	6,000	6,000
Boston & Cal			36,000	36,000	Napa Con			40,000	990,000
Boston & Colo. Sm			150,000	375,000	New Idria			40,000	120,000
Boston & Mont	May29	900,000	1,650,000	10,775,000	N.Y.& H.-Rosario	May20	15,000	60,000	1,050,000
Breece	June 1	10,000	20,000	50,000	North Star, Cal			50,000	550,000
Bul. Bec. & Champ	May15	10,000	50,000	2,368,460	Osceola	Jun.15	279,000	279,000	2,801,500
Bunker Hill & S			105,000	705,000	Parrot	May31	345,000	552,000	2,690,898
Calumet & Hecla			4,000,000	60,850,000	Pennsylvania	May 9	2,575	12,875	64,525
Cariboo				248,965	Pioneer, Cal			12,500	62,500
Centen'l Eureka	May15	15,000	75,000	2,105,000	Portland	May15	60,000	300,000	2,137,080
Central Lead	May15	5,000	25,000	107,000	Quicksilver (Pref.)	May 5	21,500	21,500	1,845,411
Charleston, S. C	June 1	20,000	20,000	200,000	Quincy			350,000	10,470,000
Colorado Sm			100,000	1,945,000	Rambler Cariboo			10,000	50,000
D'r Tr'l No. 2, Wash	May15	2,500	12,500	30,000	Republic, Wash			31,500	151,500
Doe Run	May15	2,500	12,500	72,500	Royal, B. C			25,000	1,025,000
De Lamar, Idaho	May 9	48,000	48,000	2,346,000	Sacramento			25,000	82,000
Empire State, Ida	May15	20,000	84,331	146,233	St. Joseph Lead			37,500	2,822,000
Ferris-H'g'ty, Wyo			5,000	5,000	Silver King	May10	50,000	225,000	1,875,000
Garfield Con	May20	12,000	12,000	34,000	Small Hopes			25,000	3,325,000
Gold Coin, Vict	May24	10,000	50,000	200,000	Smuggler			10,000	1,105,000
Golden Cycle	May15	5,000	25,000	178,500	South Swansea			15,000	119,060
Gold King, Col	May10	2½,000	30,000	30,000	Standard, Cal	May24	20,000	20,000	3,859,226
Golden M. & Ex			10,000	10,000	Standard, Ida			30,000	1,745,000
Grand Central, Ut	May10	37,500	175,000	493,750	Strong			100,000	625,000
Grass Valley Ex			15,000	15,000	Swansea	May10	5,000	25,000	161,500
Gwin, Cal	May10	5,000	15,000	66,500	Tamarack	Jun 27	240,000	240,000	5,910,000
Highland	May15	20,000	100,000	3,884,718	Tomboy	May31	80,000	80,000	730,000
Holy Terror			5,000	122,000	Utah, Utah			2,000	179,000
Homestake	May25	62,500	312,500	7,493,750	Vindicator			76,125	203,000
Horn Silver			20,000	5,250,000	War Eagle, B. C.	May15	26,250	131,250	309,000
Idaho, B. C			28,000	292,000	Wolverine			90,000	150,000
Isabella			135,000	405,000	Yellow Aster	May10	10,000	45,000	203,789
Jack Pot			25,000	25,000					
Jamiso., Cal			11,700	35,100	Grand Total		$3,887,825	$12,948,786	165,807,418

ASSESSMENTS.

NAME OF COMPANY.	Location.	No.	Delinq.	Sale.	Amt.
Andes	Nev	48	June 7	June 28	.05
Bullion	Nev	54	May 9	May 29	.05
Confidence	Nev	32	May 9	May 29	.20
Con. Cal. & Va.	Nev	13	May 24	June 14	.25
Crown Point	Nev.	76	May 18	June 8	.10
Florence	Utah		June 15	July 1	.00½
Geyser	Colo		May 11	June 10	.10
Granite Hill	Cal		June 14		.03
Hale & N'rcross	Nev	2	May 15	June 5	.10
*Live Oak & Minuett	Cal		June 8		.05
Mexican	Nev.	61	June 12	July 6	.10
*Monarch	Utah		May 20		.00½
Murray Hill	Utah		June 10	July 10	.00½
New Klondike	Utah		June 5	June 27	.01
*Omaha Con	Cal	4	June 20	July 15	.25
Potosi	Nev	52	May 25	June 15	.10
Red Jacket	Nev		May 27		.02
Success	Utah	5	May 20	June 10	.00½
Seg. Belcher & Mides Con	Nev	23	June 5	June 26	.05
Sunbeam Con	Utah	22	June 8	June 28	.02
Texas	Cal		June 9	June 29	.15
Utah Con	Nev	30	May 10	May 29	.05
Valeo	Utah		May 10		.05

*New Assessment.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Ætna Cons., q.	Cal.	$500,000	100,000	$5	*	.....	.....	.....	$170,000	April.	1899	.10
2	Alaska-Mexican, g.	Alask	1,000,000	200,000	5	.....	.....	.....	.....	353,031	April.	1899	.10
3	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	*	.....	.....	.....	4,070,000	April.	1899	.37½
4	Alamo, g. c. i.	Utah.	125,000	125,000	1	$937	Mar..	1898	.00¾	2,500	April.	1899	.02
5	Alice, g. s.	Mont.	10,000,000	400,000	25	*	.....	.....	.....	1,075,000	April.	1898	.05
6	American Gold, g. s. c. l	Colo..	3,000,000	300,000	10	*	.....	.....	.....	407,000	Mar..	1899	.07
7	Anaconda Copper	Mont.	30,000,000	1,200,000	25	.....	.....	.....	.....	9,750,000	May..	1899	1.25
8	Anchoria-Leland, g.	Colo..	600,000	600,000	1	*	.....	.....	.....	198,000	April	1899	.03
9	Appie Eilen, g.	Colo.	600,000	600,000	1	.....	.....	.....	.....	25,000	Aug..	1898	.01
10	Argonaut	Cal.	2,000,000	200,000	10	*	.....	.....	.....	260,000	April.	1899	.10
11	Associated, g.	Colo..	1,250,000	1,250,000	1	*	.....	.....	.....	72,000	Dec..	1898	.01
12	Atlantic, c.	Mich.	1,000,000	40,000	25	.....	.....	.....	.....	780,000	Feb..	1898	1.00
13	Aurora, i.	Mich.	2,500,000	100,000	25	*	.....	.....	.....	750,000	May..	1898	.50
14	Bald Butte	Mont.	250,000	250,000	1	*	.....	.....	.....	672,648	Mar..	1899	.06
15	Big Six, g. s.	Colo..	500,000	500,000	1	.....	.....	.....	.....	15,000	May..	1898	.00½
16	Boston & California	Cal..	600,000	600,000	1	.....	.....	.....	.....	36,000	Mar..	1899	.06
17	Boston & Colorado Sm.	Colo..	750,000	15,000	50	.....	.....	.....	.....	375,000	April.	1899	5.00
18	Boston & Mont. Con.	Mont.	3,750,000	150,000	25	*	.....	.....	.....	10,775,000	May..	1899	6.00
19	Breece, i.	Colo..	5,000,000	200,000	25	.....	.....	.....	.....	50,000	June.	1899	.05
20	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	*	.....	.....	.....	2,358,400	April.	1899	.10
21	Bunker Hill & S., s. l.	Idaho	3,000,000	300,000	10	.....	.....	.....	.....	705,000	April.	1899	.07
22	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	.....	.....	.....	.....	60,850,000	Mar..	1899	10.00
23	Cariboo, g.	B.C..	800,000	800,000	1	.....	.....	.....	.....	248,965	Feb..	1899	.01½
24	Centen l-Eureka, g. s. l. c	Utah.	1,500,000	30,000	50	30,000	Mar..	1889	1.00	2,693,000	April.	1899	.50
25	Central Lead, l.	Mo..	1,000,000	10,000	100	*	.....	.....	.....	107,000	May..	1899	.50
26	Champion, g. s.	Cal..	340,000	34,000	10	.....	.....	.....	.....	296,200	April.	1898	.25
27	Charleston, p. r.	S. C..	1,000,000	10,000	100	*	.....	.....	.....	180,000	Dec..	1898	1.50
28	Colorado, Sm., g. s. c.	Mont.	1,000,000	100,000	10	*	.....	.....	.....	1,945,000	Jan..	1899	1.00
29	Con. Tiger & Poorman	Idaho	1,000,000	1,000,000	1	*	.....	.....	.....	20,000	Dec..	1898	.02
30	Creston Leasing	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	54,000	Dec..	1898	.01
31	Cresus	Cal..	1,000,000	200,000	5	.....	.....	.....	.....	30,000	Dec..	1898	.15
32	Crowned King, g. s. l.	Ariz.	6,000,000	600,000	10	*	.....	.....	.....	232,000	Dec..	1898	.02
33	Daly, s. l.	Utah.	3,000,000	150,000	20	.....	.....	.....	.....	2,925,000	Mar..	1897	.25
34	Deadwood-Terra, g.	S. D..	5,000,000	200,000	25	*	.....	.....	.....	1,350,000	May..	1898	.15
35	De Lamar, g. s.	Idaho	2,000,000	400,000	5	.....	.....	.....	.....	2,346,000	May..	1899	.12
36	Della S.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	60,000	Jan..	1897	.10
37	Doe Run, l.	Mo..	500,000	5,000	100	.....	.....	.....	.....	72,500	May..	1899	.50
38	Dutch, g.	Cal..	1,500,000	150,000	10	.....	.....	.....	.....	39,000	Feb..	1898	.01½
39	Elkton Cons., g.	Colo..	1,250,000	1,250,000	1	.....	.....	.....	.....	656,761	Nov..	1898	.01½
40	El Paso, g. s.	Colo..	650,000	650,000	1	.....	.....	.....	.....	12,393	Jan..	1898	.01
41	Enterprise, s. l.	Colo..	500,000	500,000	1	.....	.....	.....	.....	900,000	Sept..	1898	.05
42	Empire State-Idaho	Idaho	1,000,000	100,000	10	.....	.....	.....	.....	146,233	May..	1899	.20
43	Ferris-Haggarty, c. g. s.	Wyo.	1,000,000	1,000,000	1	.....	.....	.....	.....	5,000	Mar..	1899	.00½
44	Fern.	B.C..	200,000	200,000	1	.....	.....	.....	.....	10,000	Jan..	1898	.05
45	Geyser-Marion. g.	Utah.	1,500,000	300,000	5	.....	.....	.....	.....	96,000	Sept..	1898	.02
46	Gold Coin of Victor, g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	200,000	May..	1899	.01
47	Golden Cycle, g.	Colo..	1,000,000	200,000	5	.....	.....	.....	.....	175,500	May..	1899	.02
48	Golden Fleece, g. s.	Colo..	600,000	600,000	1	*	.....	.....	.....	569,179	Feb..	1897	.01
49	Gold King, g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	30,000	May..	1899	.02
50	Golden Reward, g.	S. D..	1,000,000	100,000	10	.....	.....	.....	.....	155,000	Feb..	1898	.15
51	Grand Central, g.	Utah.	250,000	250,000	1	.....	.....	.....	.....	433,750	May..	1899	.15
52	Gwin, g.	Cal..	1,000,000	20,000	50	286,000	Jan..	1898	.....	61,500	April.	1899	.25
53	Hall Mines, Ltd.	B. C..	1,250,000	250,000	5	.....	.....	.....	.....	160,000	May	1898	.25
54	Highland, g.	S. D..	10,000,000	100,000	100	304,000	.....	.....	.....	3,884,718	May..	1899	.20
55	Holy Terror, g.	S. D..	500,000	500 000	1	.....	.....	.....	.....	122,000	Mar..	1899	.01
56	Homestake, g.	S. D.	12,500,000	125,000	100	200,000	July..	1878	1.00	7,431,250	April.	1899	.50
57	Hope of St. Louis, s.	Mont.	1,000,000	100,000	10	*	.....	.....	.....	702,254	Mar..	1898	.10
58	Horn Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*	.....	.....	.....	5,250,000	Mar..	1899	.05
59	Idaho.	B.C..	500,000	500,000	1	.....	.....	.....	.....	292,000	Jan..	1899	.05¾
60	Iowa, g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	95,000	June.	1898	.00½
61	Iron Mountain, g. s. l.	Mont.	5,000,000	500,000	10	*	.....	.....	.....	507,500	April.	1898	.02
62	Isabella, g.	Colo.	2,250,000	2,250,000	1	.....	.....	.....	.....	405,000	Feb..	1899	.06
63	Jack Pot, g.	Colo..	1,300,000	1,000,000	1	.....	.....	.....	.....	25,000	Mar..	1899	.02½
64	Jamison.	Cal.	3,900,000	117,000	10	.....	.....	.....	.....	35,100	April.	1899	.10
65	Jersey Leasing.	Colo.	200,000	158,167	1	.....	.....	.....	.....	137,875	Oct..	1898	.03½
66	Lake Superior Iron	Mich.	2,100,000	84,000	25	.....	.....	.....	.....	736,000	Feb..	1899	1.00
67	Le Roi.	B. C.	5,000,000	200,000	25	.....	.....	.....	.....	825,000	April.	1898	.10
68	Lillie, g.	Colo.	1,250,000	250000	5	.....	.....	.....	.....	215,360	April.	1898	.05
69	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	*	.....	.....	.....	1,350,000	Dec..	1898	.05
70	Matoa, g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	25,000	Dec..	1898	.02½
71	Meal, g.	Cal..	200,000	200,000	1	.....	.....	.....	.....	100,000	Mar..	1899	.20
72	Mercur, g.	Utah.	5,000,000	200,000	25	*	.....	.....	.....	1,266,000	Jan..	1899	12½
73	Minnesota Iron, i.	Minn.	16,500,000	165,000	100	*	.....	.....	.....	4,735,000	Oct..	1898	1.50
74	Modoc, g.	Colo.	500,000	500,000	1	.....	.....	.....	.....	130,000	May..	1899	.02
75	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	*	.....	.....	.....	453,700	April.	1899	.12
76	Montana Ore Purchas'g	Mont.	2,500,000	80,000	25	*	.....	.....	.....	1,040,000	April.	1899	1.00
77	Montreal.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	7,500	Nov..	1898	.01
78	Moon-Anchor Con., g.	Colo..	1,750,000	600,000	1	.....	.....	.....	.....	261,000	Nov.	1898	.07½
79	Morning Star, g.	Cal..	240,000	2,400	100	70,800	Feb..	1887	.75	720,670	April.	1899	2.50
80	Monument.	Colo..	300,000	300,000	1	.....	.....	.....	.....	12,624	Dec..	1898	.01
81	Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	60,000	Jan..	1898	.02
82	Moulton.	M nt.	2,000,000	400,000	5	.....	.....	.....	.....	480,00	Feb..	1899	.05
83	Mountain Copper	Cal..	6,250,000	250,000	25	.....	.....	.....	.....	93,750	Sept..	1898	.62½
84	Napa Cons., q.	Cal..	700,000	100,000	7	*	.....	.....	.....	990,000	April.	1899	.20
85	New Idria, q.	Cal..	500,000	100,000	5	.....	.....	.....	.....	120,000	April.	1899	.20
86	N. Y. & Hon Rosario, s. g.	C. A..	1,500,000	150,000	10	*	.....	.....	.....	1,050,000	May..	1899	.10
87	North Star, g.	Cal..	5,000,000	500,000	10	20,000	June	1885	.02	550,000	April.	1899	.25
88	Nugget.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	20,000	Aug	1898	.00½
89	Ontario, s. l.	Utah.	15,000,000	150,000	100	.....	.....	.....	.....	13,557,500	Nov.	1897	.75
90	Orphan Bell, g.	Colo..	1,000,000	1000,000	1	.....	.....	.....	.....	115,000	Mar..	1898	.01
91	Ophir Hill.	Utah.	25,000	1,000	25	.....	.....	.....	.....	20,000	Dec..	1898	39.00
92	Osceola, c.	Mich.	2,500,000	93,000	25	*	.....	.....	.....	2,522,500	Dec..	1898	2.00
93	Parrot, c.	Mont.	2,300,000	230,000	10	*	.....	.....	.....	2,345,898	Mar..	1899	.30
94	Pennsylvania Cons.	Cal..	5,150,000	51,500	100	50,051	Feb..	1892	.05	64,525	May..	1899	.05
95	Pioneer g.	Cal..	1,000,000	100,000	10	.....	.....	.....	.....	62,500	Mar..	1899	.12½
96	Portland, g.	Colo..	3,000,000	3,000,000	1	*	.....	.....	.....	2,137,080	May..	1899	.02
97	Quicksilver, pref.	Cal..	4,300,000	43,000	100	.....	.....	.....	.....	1,845,411	May..	1899	.50
98	Quicksilver, com.	Cal..	5,700,000	57,000	100	.....	.....	.....	.....	643,867	July..	1882	.40
99	Quincy, c.	Mich.	2,500,000	100,000	25	*	.....	.....	.....	10,470,000	Feb..	1899	.50
100	Rambler Cariboo	B.C..	1,000,000	1,000,000	1	*	.....	.....	.....	50,000	April.	1899	3.01
101	Raven, g.	Colo..	1,500,000	1,500,000	1	.....	.....	.....	.....	19,500	Mar..	1898	.01
102	Reco, s. l.	B.C..	1,000,000	1,000,000	1	.....	.....	.....	.....	297,500	Jan..	1898	.10
103	Republic Cons., g.	Wash	3,500,000	3 150,000	1	.....	.....	.....	.....	151,500	April.	1899	.01
104	Royal Con., g.	B. C.	2,500,000	2,500,000	1	.....	.....	.....	.....	1,025,300	Mar..	1899	.01
105	Sacramento, g.	Utah.	5,000,000	1,000,000	5	.....	.....	.....	.....	82,000	April.	1899	.00½
106	St. Joseph, l.	Mo..	3,000,000	300,000	10	*	.....	.....	.....	2,822,000	Mar..	1899	.50
107	Santa Rosalia, g. s.	Cal..	100,000	100,000	1	.....	.....	.....	.....	125,000	Feb..	1898	1.10
108	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	3,000	Jan.	1897	.02	1,975,000	May..	1899	.25
109	Small Hopes, s.	Colo..	5,000,000	250,000	20	*	.....	.....	.....	3,325,000	Feb..	1898	.10
110	Smuggler, s. l. z.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	1,105,000	Jan..	1899	.01
111	South Swansea, s. l.	Utah.	150,000	150,000	1	.....	.....	.....	.....	119,960	April.	1899	.05
112	Standard Cons., g. s.	Cal..	2,000,000	200,000	10	99,888	June.	1890	.50	3,854,226	May..	1899	.10
113	Standard.	Idaho	500,000	500,000	1	.....	.....	.....	.....	1,745,000	April.	1899	.06
114	Swansea, s. l.	Utah.	500,000	100,000	5	.....	.....	.....	.....	161,500	May..	1899	.05
115	Tamarack, c.	Mich.	1,500,000	60,000	25	.....	.....	.....	.....	5,570,000	Dec..	1898	.00
116	Tomboy, g.	Colo..	2,000,000	200,000	10	.....	.....	.....	.....	650,000	Dec..	1898	4.25
117	Utah.	Utah.	1,000,000	100,000	10	*	.....	.....	.....	179,000	Jan..	1899	.02
118	Victor, g.	Colo..	1,000,000	200,000	5	*	.....	.....	.....	1,155,000	Dec..	1898	.50
119	Vindicator, Cons. g.	Colo..	1,500,000	1,015,000	1	.....	.....	.....	.....	293,300	April	1899	.05
120	War Eagle, Cons.	B.C..	2,000,000	1,750,000	1	.....	.....	.....	.....	360,000	May..	1899	.01½
121	Western Mine Enterp.	Mont.	500,000	500,000	1	*	.....	.....	.....	48,680	Jan..	1898	.20
122	Whitewater.	B.C..	625,000	125,000	5	.....	.....	.....	.....	194,000	April.	1898	.32
123	Wolverine, c.	Mich.	1,500,000	60,000	25	180,000	Mar..	1895	1.00	150,000	April.	1899	1.50
124	Yellow Aster, g.	Cal..	1,000,000	100,000	10	*	.....	.....	.....	178,789	April.	1899	.10

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			
1	Ada Cons., s. l.	Utah.	$100,000	100,000	$1	$3,333	Nov..	1895	.01½
2	Alliance, g. s. l.	Utah.	150,000	150,000	1	200,000	Dec..	1895	.10
3	Allouez, c.	Mich.	2,500,000	100,000	25	1,520,937	June.	1894	1.00
4	Alpha Cons., g. s.	Nev..	105,000	105,000	1	316,050	Nov..	1898	.03
5	Alta, s.	Nev..	216,000	108,000	2	3,670,310	Mar..	1899	.05
6	Alta	Utah.	$750,000	750,000	1	938	Mar..	1899	.00½
7	American Quartz, g.	Cal..	1,000,000	100,000	10	1,000	Feb..	1897	.01
8	Anchor, g. s. l.	Utah.	1,500,000	150,000	10	560,000	Aug..	1893	.20
9	Andes, g.	Nev..	300,000	100,000	3	1,200,000	Jan..	1899	.05
10	Arnold, c.	Mich.	1,500,000	60,000	25	180,000	Jan..	1899	3.00
11	Baliol, g.	Cal.	1,000,000	100,000	10	55,000	Mar..	1898	.30
12	Belcher, s. g.	Nev..	312,000	104,000	3	3,525,200	Mar..	1899	.10
13	Belle Isle	Nev..	10,000,000	100,000	100	240,271	July..	1896	.10
14	Benton Con. s.	Nev..	10,800,000	108,000	100	587,023	June.	1897	.25
15	Best & Belcher, g. s.	Nev..	302,400	100,800	3	2,599,723	April.	1899	.10
16	Bogan.	Utah.	1,250,000	125,000	10	26,875	Dec..	1897	.01½
17	Boston & Cp. Ck., g.	Co'o..	400,000	200,000	2	20,000	Aug..	1898	.10
18	Brunswick Cons., g.	Cal..	500,000	500,000	1	160,000	July..	1897	.03
19	Bullion, s. g.	Nev..	100,000	100,000	1	3,125,000	May..	1899	.05
20	Caledonia.	Nev..	300,000	200,000	3	3,210,000	Nov..	1897	.10
21	Centennial, c.	Mich.	2,500,000	100,000	25	460,000	Mar..	1898	3.00
22	Central Eureka, g.	Cal..	4,000,000	400,000	10	92,000	Mar..	1899	.02
23	Challenge Cons, s. g.	Nev..	150,000	50,000	3	430,000	Mar..	1899	.05
24	Chollar, g. s.	Nev..	336,000	112,000	3	2,959 800	Jan..	1899	.10
25	Confidence, g. s.	Nev..	74,880	24,960	3	545,118	May..	1899	.20
26	Con., Cal. & Va.	Nev..	540,000	216,000	2½	734,000	May..	1899	.25
27	Cons. Imperial, g. s.	Nev..	500,000	500,000	1	2,246,000	Nov..	1898	.01
28	Con. New York	Nev..	100,000	100,000	1	160,500	Nov..	1898	.03
29	Crown Point, g. s.	Nev..	300,000	100,000	3	2,980,000	May..	1899	.10
30	Dalton, s. l.	Utah.	2,500,000	500,000	5	58,750	April.	1899	.01
31	Dexter.	Nev..	1,000,000	200,000	5	38,000	Apr..	1898	.15
32	Diamond Con.	Ut ah.	1,000,000	200,000	5	8,000	Mar..	1899	.04
33	Eagle, g. s.	Cal..	500,000	100,000	5	5,000	Dec..	1896	.05
34	Eagle, g. s.	Ore..	1,000,000	100,000	10	6,000	Oct..	1898	.01½
35	Emerald.	Utah	300,000	300,000	1	3,000	Oct..	1898	.00¾
36	Eureka Cons., g. s. l.	Nev..	1,000,000	50,000	20	585,000	Sept..	1898	.20
37	Eureka Con. Drift, g.	Cal..	500,000	500,000	1	175,000	Feb..	1899	.00¾
38	Exchequer, g. s.	Nev..	1,000,000	100,000	1	1,020,000	Dec..	1897	.05
39	Florence.	Utah.	1,000,000	200,000	5	500	Mar..	1899	.00¾
40	Four Aces.	Utah.	250,000	250,000	1	5,000	Mar..	1898	.01
41	Galena.	Utah.	1,000,000	100,000	10	10,000	Oct..	1898	.10
42	Geyser, s. l.	Colo..	5,000,000	500,000	10	1,175,000	May..	1899	.10
43	Gold Belt, g. s.	Utah.	500,000	500,000	1	3,012	July..	1896	.00½
44	Gold Coin	Colo..	1,000,000	200,000	5	10,000	Mar..	1899	.05
45	Golden Fleece Grav. g	Cal.	130,000	130	1000	56,250	Mar..	1897	2.00
46	Gold & Silver Carb.	Utah.	500,000	500,000	1	2,500	Mar..	1899	.00½
47	Gould & Curry	Nev.	324,000	108,000	3	4,614,350	Dec..	1898	.10
48	Great Eastern, g.	Utah.	1,500,000	300,000	5	5,000	Oct..	1898	.00½
49	Great Western, q.	Cal..	5,000,000	50,000	100	75,526	May..	1899	.15
50	Hale & Norcross, g. s.	Nev..	11,200,000	112,000	100	5,716,280	May..	1899	.10
51	Horse Shoe Bar Cons.	Cal..	6,000,000	60,000	100	85,800	Jan..	1899	.05
52	Julia Con.	Nev..	110,000	110,000	1	1,498,800	Jan..	1899	.03
53	Jupiter, g.	Cal..	2,000,000	20,000	100	80,000	Feb..	1898	.20
54	Justice, g. s. c.	ev..	210,000	105,000	2	3,652,000	Feb..	1899	.05
55	Kentuck.	Utah.	600,000	300,000	2	30,000	Aug..	1898	.10
56	Kentuck Cons., s.	Nev..	105,000	105,000	1	125,300	June.	1898	.05
57	Lacrosse, g.	Colo..	1,000,000	100,000	10	*	.....	.....	.....
58	Little Pittsburg.	Utah.	2,000,000	400,000	5	18,000	Dec..	1898	.01
59	Lower Mammoth.	Utah.	150,000	150,000	1	15,000	Oct..	1898	.05
60	Lucky Bill.	Utah.	300,000	120,000	2.50	56,400	June.	1898	.01¼
61	Marguerite, g.	Cal..	500,000	50,000	10	75,000	Feb..	1899	.10
62	May Day.	Utah.	100,000	400,000	¼	4,000	Jan..	1899	.00¾
63	Mayday, g. s.	Cal..	50 000	50,000	1	5,000	May..	1898	.10
64	Mayflower, g.	Cal..	1,200,000	60,000	20	6,000	Sept..	1898	.05
65	Merced, g.	Cal..	1,500,000	100,000	15	200,000	July..	1890	2.00
66	Meteor, s. l.	Utah.	600,000	300,000	2	6,734	Feb..	1899	.01
67	Mexican, g. s.	Nev.	302,400	100,800	3	2,258,720	Nov.	1898	.10
68	Montreal.	Utah.	2,500,000	250,000	10	30,625	April.	1899	.05
69	Mt. Diablo s.	Nev..	5,000,000	50,000	100	150,000	Dec..	1898	.10
70	Morning Star, s.	Nev..	1,500,000	150,000	10	32,500	Dec..	1898	.00½
71	Nashville, g.	Cal..	115,000	11,500	10	2,000	Sept..	1898	.17
72	North Banner, g. s.	Cal..	1,000,000	100,000	10	21,794	Oct..	1896	.02
73	North Belle Isle, s.	Nev..	10,000,000	100,000	100	523,074	July..	1896	.10
74	No. Gould & Curry	Nev..	100,000	100 000	1	375,000	Dec..	1898	.10
75	Northern Light, g.	Utah.	2,000,000	400,000	5	80,000	July.	1898	.10
76	Occidental Cons g s.	Nev..	300,000	100,000	3	509,179	April.	1899	.10
77	Ophir, g. s.	Nev.	324,000	108,000	3	4,619,768	April.	1899	.15
78	Opohonga.	Utah.	200,000	100,000	2	1,500	June.	1898	.01
79	Oro Cache, g. s.	S. D..	1,250,000	250,000	5	6,250	July..	1893	.00½
80	Osceola, g.	Cal..	10,000,000	100,000	100	10,924	Sept..	1898	.01
81	Overman, g. s.	Nev..	230,400	115,200	2	4,135,450	Mar..	1899	.05
82	Peer, s.	Ariz..	10,000,000	100,000	100	215,000	July..	1894	.05
83	Peerless, s.	Nev..	10,000,000	100,000	100	410,000	July..	1894	.05
84	Pine Hill, g.	Cal..	1,000,000	100,000	10	30,000	July..	1897	.05
85	Potosi, g. s.	Nev..	336,000	112,000	3	2,168,400	May..	1899	.10
86	Red Mountain, s.	Colo..	300,000	60,000	5	22,500	Mar..	1891	.12½
87	Rescue, g.	Nev..	100,000	10,000	10	5,500	Feb..	1899	.05
88	Reward, g.	Cal..	64,000	64,000	1	63,680	Nov..	1898	.02
89	Ridge, c.	Mich.	500,000	20,000	25	239,939	Feb..	1897	1.00
90	St. Mary, c.	Mich.	1,000,000	40,000	25	4,000	July..	1895	.05
91	Savage, g. s.	Nev..	280,000	112,000	2½	7,309,800	Feb..	1899	.10
92	Scorpion, s.	Nev..	100,000	100,000	1	445,000	Dec..	1897	.05
93	Scg Belcher & M g s.	Nev..	200,000	100,000	2	368,000	Nov..	1898	.03
94	Sevier, g. s.	Utah.	1,250,000	250,000	5	50,000	April.	1897	.04
95	Shower Con.	Utah.	2,000,000	400,000	5	8,000	Mar..	1899	.02
96	Sierra-Nevada, g. s.	Nev..	300,000	100,000	3	6,706,949	Feb..	1898	.20
97	Silver Age, g. s. l.	Colo..	2,000,000	200,000	10	*	.....	.....	.....
98	Silver Hill, s.	Nev..	108,000	108,000	1	2,220,200	May..	1898	.01
99	Silver King, s.	Ariz..	10,000,000	100,000	100	465,000	Feb..	1899	.25
100	Silver Queen, c.	Ariz..	5,000,000	200,000	25	*	.....	.....	.....
101	Silver State, g.	Colo..	700,000	700,000	1	*	.....	.....	.....
102	Silver State, s. g. l.	Utah.	100,000	100,000	1	1,000	Sept..	1897	.00½
103	Siskiyou Con., s.	Cal.	2,000,000	200,000	10	46,000	Apr..	1898	.01
104	Snow Flake.	Utah.	500,000	100,000	5	49,000	April.	1899	.02
105	South Fork Con.	Utah.	50,000	50,000	1	5,000	Mar..	1898	.01
106	South Side.	Mich.	1,000,000	40,000	25	4,000	Jan..	1899	.10
107	Star, g. s.	Utah.	1,000,000	200,

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

NOTE.—These quotations are for wholesale lots n New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to May 1st. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Review of Cnemicals and Minerals.

Abrasives—	Cust. Meas.	Price.
Carborundum, f.o.b. Niagara Falls grains	lb.	$0.10@$0.15
Powdered	"	.08@.10
Corundum, N. C.	"	.07@.10
Chester	"	.04½@.05
Emery, Turkish flour	"	.03
Grains	"	.05
Naxos flour	"	.03
Grains	"	.05
Chester flour	"	.03
Grains	"	.05
Peekskill flour	"	.01¾
Grains	"	.02½
Crude, Kuluk, best	lg. ton	18.50
Levant, " "		22.00
Naxos (Greek) best	"	32.00
Pumice Stone, Am. powd.	lb.	.01@.02
Italian, powdered	"	.01½
Lump, per quality	"	.05@.40
Rottenstone, ground	"	.02½@.03
Lump, according to quality	"	.05@.14
Rouge	"	.17@.30
Tripoli, prepared	sh. ton.	20.00
Acids—Acetic, 30% pure	lb.	.02¾
30% ch. pure	"	.06½
80% pure	"	.09
Glacial, pure	"	.11¾
Chem. pure	"	.21
Benzoic, English	oz.	.09@.09½
German	lb.	.46@.47
Boracic, pure cryst	"	.11
Powdered	"	.10½@.11¼
Carbolic, cryst. in drums	"	.14½@.15½
Carbonic, liquid	"	.15
Chromic, crude	"	.25
Chem. pure	"	.50
Absol. ch. pure	"	1.75
Hydrochloric, ch. pure	"	.08
Hydrofluoric, 30%	"	.03@.04½
48%	"	.05@.06
Best	"	.25
Nitric, chem. pure	"	.10
Sulphuric, 98%	"	.02
Chem. pure	"	.07
Tartaric, cryst	"	.31½@.32
Powder	"	.32@.32½
Alcohol—Grain	gal.	2.42@2.44
Extra refined wood, 95%	"	.75
Special, refined, 97%	"	.80
Purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.65
Powdered	"	2.50
Ground	"	1.75
Chrome, com'l	"	3 50
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	"	.04½
Sulphate, pure	"	.02
Ammonia—Aqua, 16°	"	.02
18°	"	.02½
20°	"	.03
26°	"	.04½
Ammonium—Bromide, p'r'd	"	.52@.53
Carbonate lumps	"	.07½@.07½
Powdered	"	.08¼@.08½
Muriate, gran., white	"	.05¾
Lump	"	.08¼
Gray	"	.05½
Nitrate, white, pure (99%)	"	.10¾
Antimony—Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¼
Best	"	.08¼
Oxide, com'l white, 95%	"	.20
Com'l white, 99%	"	.35
Com'l gray	"	.07@.08
Sulphuret, com'l	"	.16
Arsenic—White	"	.04¼@.04½
Red	"	.07¾@.08
Asphaltum—California Ventura	sh ton	32.00
Cuban, refined	lb.	.04¼
Common	"	.02
Egyptian, refined	"	.06½
Trinidad, refined	"	.01½
San Valentino	lg. ton	16.00
Gilsonite, Utah, ordinary	lb.	.03¼
Select	"	.03¾
Barium—Carbonate, lump, 80@90%	"	25.00@27.50
92@98%	"	25.25@29.00
Powdered, 80@90%	lb.	.01¾@.02
Chloride, com'l	"	.02¼
Chem. pure cryst	"	.05
Nitrate, powdered	"	.08
Oxide, com'l, hyd.cryst	"	.18@.22
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.01@.02¾
Barytes—Crude, No. 1	sh. ton	9.00@10.00
No. 2	"	8.00@8.25
No. 3	"	7.75@8.00
Prime White	"	18.00@20.00
Floated	"	19.00@20.00
Bauxite—Georgia, f.o.b. cars, first grade	lg. ton	5.10
Second grade	"	4.35
Alabama, f. o. b. cars Rock Run	"	3.85
Benzole 90%	gal.	1.00@1.10
Bismuth—Oxide, hydr.	lb	2.25@2.56
Subnitrate cryst	oz.	.09@.10
Bitumen, "B"	lb.	.03½
"A"	"	.05
Bone Ash	"	.02¾@.03½
Borax—Cryst. and pow'd	"	.07@.07½
Calcined	"	.19
Bromine—Bulk	"	.45
Cadmium—Metal'ic	"	1.90@2.00
Sulphide	"	1.90@2.25
Sulphate	"	2.00@2.50
Calcium—		
Carbide, in ton lots, f. o. b. Niagara Falls, N.Y.	"	.03@.04
Calcium—	Cust. Meas.	Price.
Acetate, pure white	lb.	.10
Gray	100 lbs.	1.25@1.30
Brown	"	.80@.85
Carbonate, ppt.	lb.	.05
Chloride	100 lbs.	.90@1.00
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.95@2.00
Foreign	"	1.75@2.50
"Rosendale," 300 lbs.	"	.90
Sand cement, 400 lbs.	"	1.85@1.95
Slag cement, imported.	"	1.65
Ceresine—		
Orange and Yellow	"	.10½@.11½
White	"	.11@.13½
Chalk—Lump, bulk	sh. ton	2.15@2.25
Ppt.	lb.	.04@.04½
French	100 lbs.	.30@.35
Chlorine—Liquid	lb.	.30
Water	"	.15
Chrome Ore—		
(50% chrome) ex-ship	lg. ton	23.00
Clay, China—Am. com., ex-dock, N. Y.	sh. ton	7.50
Am. best, ex-dock, N. Y.	"	8.50
English, common	lg ton	11.00
Best grade	"	17.00
Fire, ground, f.o.b. Jersey City, N. J.	sh. ton	4.00@5.00
Slip Clay	"	6.00
Cobalt—Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide—Black	"	1.75
Gray	"	2.25
Smalt, blue ordinary	"	.14
Best	"	.25
Chem. pure	"	5.00
Copperas	100 lbs.	.60@.62½
Copper—Carbonate	lb.	.16@.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, black	"	.16@.20
Red	"	.16@.20
Cream of Tarter—crys.	"	.23¼@.23½
Granulated	"	.23¼@.23½
Powdered	"	.23½@.24
Cryolite	"	.06¾@.08½
Explosives—		
Blasting powder, A	"	.10¾
Blasting powder, B	"	.05@.05¾
"Rackarock," A	"	.25
"Rackarock," B	"	.18
Judson R.R. powder, by carload	"	.10
Dynamite, (40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.17
(60% nitro-glycerine)	"	.19
(75% nitro-glycerine)	"	.23
Glycerine, for nitro (32 2-10° Be.)	"	.11@.11¼
Nitro-Benzole	"	.14@.15
Feldspar—Ground	sh. ton	6.50@7.75
Flint—(See Silica).		
Fluorspar—Am. lump	"	6.50@7.00
Gravel	"	6.00
Crushed	"	6.00
Ground	"	10.50@11.00
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Graphite—(See Plumbago).		
Gypsum—		
Am. gr'd (terra alba)	sh. ton	8.00
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—		
Ground, best qualities	"	20.00@.40 00
Iodine—Crude	100 lbs.	2.45
Resublimed	"	2.85
Iron—Chromate	lb.	.03@.10
Muriate	"	.05
Nitrate, com'l	"	.01¼@.01¾
True	"	.04
Oxide	"	.02@.12
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white, b'k'n	lb.	.07
Com'l, broken	"	.06¼
White, gran	"	.08¼
Nitrate, com'l	"	.06½@.06¾
Chem. pure	"	.35
Lime—Bldg., ab. 250 lbs	bbl.	.65@.75
Finishing	lb.	.75@.80
Magnesite—		
Crude, lump (95%) Greece	lg. ton	7.00
German (85%)	"	12.00
Calcined, 600° C. (Greece)	sh. ton	17.50
1,000° C. (Greece)	"	19.50
3,000° F. (Greece)	lg. ton	30.00
Domestic, soft	sh. ton	12.00@15.00
Bricks, all magnesite	M.	185 00
Magnesite and chrome	"	226.00
Magnesium—		
Metallic, ingots (Ger.)	kg.	5.95@6.90
Powdered (Ger.)	"	6.19
Ribbon or wire (Ger.)	"	10.00
Carbonate	lb.	.10
Chloride, com'l	"	.01¾
Fused	"	.20
Nitrate	"	.60
Manganese—Crude, pow'd 75@75% binoxide	"	.01¼@.01¼
75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¾
90@95% binoxide	"	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%	unit	.21@.22½
Marble—Flour	sh. ton	5.50@8.00
Mercury—Bichloride	lb.	.59@.60
Bisulphate	"	.41
Mica—N. Y. gr'nd. coarse	lb.	.06@.08
Fine	"	.08@.10
Mica—Sheets, 1½x3 in	"	.60
8x10 in	"	13.00
Mineral Wool—F. o. b. Stanhope, N. J.:		
Slag, ordinary	100 lbs.	1.00
Selected	"	1.67
Extra	"	4.00
Rock, ordinary	sh. ton	37.00
Selected	100 lbs.	4.00
Extra	"	7.00
Monazite—92%	sh. ton	140.00
Nickel—Oxide, bl'k No. 1	lb.	1.00
Black No. 2	"	.60
Green, No. 1	"	1.00
No. 2	"	.60
Oils—Black, reduced 29 gr., 25@30 cold test	gal.	.07@.07½
Black reduced 29 gr. 15 cold test	"	.08@.08½
Black reduced 29 gr. zero	"	.11@.12
Black reduced summer	"	.06½@.07
Smith's Ferry, 33@34 gr.	"	.07½@.08½
West Virginia, 29 gr.	"	.22@.24
Cylinder, dark steam ref	"	.08@.13
Dark filtered	"	.11@.16
Light filtered	"	13@.15½
Extra cold test	"	.21@.25
Gasolene, 86°	"	.14@.15
88°	"	.16@.17
90°	"	.19@.20
Neutral filtered, lemon, 32@34 gr.	"	.13@.18½
White, 33@34 gr.	"	.21@.23
Wool grade, 32 gr.	"	.11@.14
Naphtha, crude, 68@72°	"	.10
Deodorized	"	.10½
Paraffine, high viscosity	"	.20@.25
903-907 sp. gr	"	.09½@.09½
903 sp. gr.	"	.08½@.08½
883 "	"	.07½@.07¾
865@875 sp. gr.	"	.07¼@.07½
Red No. 1	"	.08¾@.09¼
No. 2	"	.08¼@.08¾
Linseed, domestic raw	"	.46@.48
Boiled	"	.50@.51
Calcutta, raw	"	.58
Graphite, lubricating, Am. dry	lb.	.10
In oil	"	.12
Axle grease	"	.08½@.10
Wood grease	"	.05@.06
Ozokerite—		
Foreign	"	.06@.08
Paints and Colors—		
Benzine, Samatra	"	.35@.40
Marbled	"	.27@.28
Chrome green, common	"	.05@.06
Extra	"	.12@.15
Chem. pure	"	.19@.25
Super	"	.10@.12
Yellow, common	"	.10
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack—Com'l	lb.	.03@.05
Refined	"	.08@.10
Calcined	"	.12@.20
Fine spirit	"	.20@.35
Litharge, Am. powd	"	.05½@.05¾
English flake	"	.07¾@.08
Metallic, brown	sh. ton	18.00@20.00
Red	"	18.00@20.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾@.05
French, washed	"	.01¼@.02¼
Orange mineral, Am.	"	.07¾@.08¾
Foreign, as to make	"	.08½@.11
Paris green, pure	"	.12½@.14
Red lead, American	"	.05¼@.05¾
Foreign	"	.07½@.08
Shellac, "D. C."	"	.27@.28
Native	"	.16@.17
Turpentine, spirits	gal.	.44½@.45
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.14@.16
Quicksilver, bulk	"	.61
Chinese	"	.80@.90
English, imported	"	.70@.90
Artificial	"	.10@.20
White lead, Am., dry	"	.05@.05¾
In oil	"	.05½@.05¾
English, in oil	"	.07½@.08¼
Whiting, common	100 lbs.	.40@.50
Gilders	"	.47@.56
Zinc white, Am., ex-dry	lb.	.04½@.05
American, red seal	"	.07@.05¾
Green seal	"	.07¼@.08
Foreign, red seal, dry	"	.07@.08¾
Green seal, dry	"	.07¼@.09¾
Foreign, red seal, in oil	"	.10¼@.11¼
Green seal, in oil	"	.11¾@.12½
Plumbago—Am., pulv., f.o.b., Providence, R. I.	sh. ton	30.00
Lump	"	8.00
German, lump	100 lbs.	1.25
Pulverized	lb.	.02
Ceylon, common	"	.04
Best	"	.06@.10
Pulverized, common	"	.04½
Best	"	.06@.08
Italian, pulv.	"	.01¼
Potash—Caustic	"	.04@.05
Potassium—		
Metallic, in balls (Ger.)	kg.	17.85
Bicarbonate cryst	lb.	.08¼
Powdered or gran	"	.12
Bichromate	"	.09½@.09¾
Bromide	"	.46@.48
Carbonate	"	.02¾@.03½
Chromate	"	.35
Cyanide (98@99%)	"	.28@.30
Permanganate, pure cr.	"	.14@.15
Silicate	"	.06
Prussiate, yellow	"	.16@.17
Red	"	.37@.40
Potassium—	Cust. Meas.	Price.
Sulphide, com'l	lb.	.10
Quartz—(See Silica).		
Rosin—Common	bbl.	1.35
Best	"	3.00@3.10
Salt—N.Y. com. fine abt. 380 lbs	bbl.	.70
N. Y. agricultural	sh. ton	1.50
N. Y. coarse	"	2.30
N. Y. dairy and table	"	2.90
Saltpeter—Crude	100 lbs.	3.80@3.85
Refined	"	4.25@5.50
Silica—		
Ground quartz, ord.	sh. ton	6.00@8.00
Best	"	12.00
Lump quartz	"	2.50@4.00
Fire bricks (Blue Welch)	M.	35.00
Silver—Chloride	oz.	.65
Nitrate	"	.42@.43
Oxide	"	.85@1.10
Sodium—Metallic	lb.	.75
Acetate, com'l	"	.08½
Bichromate	"	.07¾
Bisulphite, com'l	"	.01
Bromide	"	.49@.50
Chlorate, com'l	"	.03¾@.10
Hyposulphite	100 lbs.	1.60@1.70
Nitrite	lb.	.07½@.07¾
Peroxide	"	.45
Phosphate	"	.03@.04
Silicate, com'l, 40°	"	.01
Concentrated	"	.04¾
Sulphate, gran., puri'd	"	.03
Sulphide	100 lbs.	1.50
Sulphite	lb.	.03¾
Tungstate, com'l	"	.35
Pure	"	.50
Strontium—Carb., ppt.	"	.13@.14
Nitrate	"	.07¼@.07¾
Sulphur—Roll	100 lbs.	1.70
Flour	"	1.80@1.85
Flowers, sublimed	"	2.00
Talc—N. C No. 1	sh ton	15.00@15.50
No. 2	"	10.00@12.00
N. Y., Fibrous	"	8.00@9.00
French, best	"	20.00
Italian, best	"	20.00
Tar—Coal	bbl.	3.00
Tin—Chloride	lb.	.11@.13
Crystals	"	.18@.19
Muriate, best	"	.10
Oxide, white, ch. pure	"	.32@.35
Uranium—Oxide	"	1.80@2.00
Zinc—Metallic, ch. pure	"	.09
Carbonate	"	.15
Chloride	"	.07½@.10
Dust	"	07@.07¼
Sulphate	"	.02¼

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5.71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N Y.)	oz.	2.50
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Calcium—Electrol	"	4.28
Cerium—Fused	grm.	2.02
Nitrate (N. Y.)	lb.	28.00
Chromium—Fused	kg.	5.95
Pure powder	"	1.79
Chem. pure cryst	grm.	.19
Cobalt—(98@99%)	kg.	5.35@5.71
Pure	"	30.94
Didymium—Powder	grm.	3.81
Nitrate (N. Y.)	oz.	4.00
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	3.00
Gallium	grain	9.52
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	lb.	2.50
Indium	grm.	4.05
Iridium	"	1.19
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	3.50
Lithium	grm.	2.38
Nitrate (N Y.)	oz.	.60
Molybdenum—Powder	kg.	2.62
Fused, electrol	100 grms.	15.47
Niobium	grm.	3.81
Osmium	"	.95
Palladium	"	.95
Rhodium	"	2.87
Rubidium—Pure	"	4.76
Ruthenium—Pure	"	1.55
Selenium—Com'l powder	kg	26.18
Sublimed powder	"	35.70
Sticks	"	28.56
Silicium—Amorphous	100 grms.	2.87
Crystals, pure	"	7.14
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks	100 grms.	11.90
Powder	"	9.52
Thallium	kg.	23.80
Thorium—Metallic	grm.	7.85
Nitrate 49@50% (N. Y.)	lb.	7.50@8.00
Titanium	grm.	.71
Uranium	"	.48
Nitrate (N. Y.)	oz.	.25
Vanadium—Fused	grm.	1.19
Wolfram—Fused	100 grms.	23.80
Powder, 95@98%	kg.	2.38
Chem. pure	"	7.14
Yttrium	grm.	3.33
Nitrate (N. Y.)	oz.	4.00
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71
Nitrate (N. Y.)	oz.	1.00